UNDERSTANDING PERCEPTIONS OF EMERGING ADULTHOOD IN COLLEGE AND NON-COLLEGE YOUTH

A DISSERTATION SUBMITTED TO THE GRADUATE DIVISION OF THE UNIVERSITY OF HAWAI`I AT MĀNOA IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF

DOCTOR OF PHILOSOPHY

IN

PSYCHOLOGY

MAY 2017

By

Cara E. Bellwood

Dissertation Committee:

Kristin Pauker, Chairperson
Yiyuan Xu
Ashley Maynard
Lois Yamauchi
Loriena Yancura

Keywords: emerging adulthood, adult status, forgotten half, Implicit Association Test, college students, non-college youths

DEDICATION

To my parents, Greg and Anita Bellwood, who have encouraged me every step of the way.

ACKNOWLEDGEMENTS

Thank you to my advisors, Yiyuan Xu and Kristin Pauker, for their joint support throughout my years as a graduate student at the University of Hawai`i at Mānoa. Thank you to all of my committee members for their thoughtful feedback on this project. I would also like to express my gratitude to Patricia Bruininks, who has nurtured my spirit for scientific inquiry since I was an undergraduate. I would further like to thank Noel Wescombe, who helped uncover my enthusiasm for the study of human development.

I am grateful for the support of my family and friends. A special thank you to Sam Biddle, Ashley Biddle, Jeff Chung, Leeyannah Armaine Santos, Chanel Meyers, and Libbie Brey for their help with recruitment, data collection, and for being my sounding boards as I sorted through the results.

Thank you to my husband, Michael Ray, for his willingness to uproot his life to support me in my educational goals.

ABSTRACT

A new life stage, called emerging adulthood, has been proposed to exist between the stages of adolescence and young adulthood (Arnett, 2000). The extent to which attending college influences the experience of emerging adulthood was directly tested in the following studies. In Study 1 a sample of 153 college students and 153 non-college youths (NCYs) were compared on existing measures of emerging adulthood. Results revealed age and socioeconomic status (SES) mediated the relationship between educational group and scores on the Inventory of Dimensions of Emerging Adulthood. Results also showed age mediated the relationship between educational group (college students vs. NCYs) and perceived adult status. Furthermore, analyses revealed college students and NCYs rated similar markers of adulthood as most important for becoming an adult. In Study 2 an implicit measure was developed to assess associations between the categories of self and adult. The implicit associations were then compared between educational groups. NCYs showed stronger implicit associations of the self with adult compared to college students. The implicit measure of association of the self with adult did not replicate results from the explicit measures where participants indicated how far they believed they had progressed into adulthood. Results from these studies provide evidence that many demographic variables, including attending college, impact the experience of emerging adulthood, which raised concerns about the generalizability of the theory.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

CHAPTER 1: INTRODUCTION

Emerging adulthood is described by Arnett (2000) as a new developmental period afforded to young people in today's industrialized or post-industrial societies. Emerging adulthood is proposed to occur between the stages of adolescence and young adulthood, applying most commonly to individuals 18- to 25-years-old, but may extend to 29-years-old for some. Many factors, such as socioeconomic status (SES), gender, and ethnicity, have been identified to influence the extent to which an individual may experience the stage of emerging adulthood (Crocetti et al., 2015; Arnett & Tanner, 2011; Nelson et al., 2007). One key factor that may prolong emerging adulthood is enrollment in college. Although attending college has been noted to influence the experience of emerging adulthood (Arnett & Taber, 2011), the degree of this influence is unclear as only a limited number of studies have directly compared college students and non-college students on measures assessing emerging adulthood (Crocetti et al., 2015; Hendry & Kloep, 2010; Reifman, Arnett, & Colwell, 2007). The proposed research has two aims: (a) to directly compare individuals attending college to their non-college peers on measures assessing the experience of emerging adulthood, and (b) to investigate implicit associations of the self with adulthood between young people who attend college and their non-college peers. Using an implicit measure of associating the self with adulthood will provide a new method of examining the experience of emerging adulthood in the two populations.

Arnett's Theory of Emerging Adulthood

Theoretical Background

Stage theories of human development often include a life stage of adolescence directly preceding a life stage of young adulthood, however the age ranges guiding these developmental periods vary. For example, G. Stanley Hall (1904) suggested adolescence (or "youth") spans the

ages of 14- to 24-years-old (1904). In today's American society adulthood (and thus the end of adolescence) is considered to start at 18-years-old, which is driven by legal sanctions. In Hall's perspective, 18-year-olds would still be in the middle of their adolescent life stage. We can see that age ranges concerning the boundaries of developmental stages are variable to some extent. This suggests definitions of adulthood may change over time or in different contexts.

Additionally, many prominent theorists throughout history have acknowledged a transition period between adolescence and young adulthood. One of the most prominent developmental stage theorists is Erik Erikson (1950), who proposed a series of eight stages across the lifespan. In Erikson's theory, young adulthood directly follows adolescence. However, Erikson described a period of "psychological moratorium" which he believed to be commonly experienced by young people in industrialized societies. According to Erikson, a psychological moratorium characterized a prolonged adolescence– a time in which young people were allowed to explore their options (in many arenas) before choosing their future paths. The idea of a psychological moratorium suggests some individuals take longer to enter the stage of young adulthood than others.

In 2000, Jeffrey Arnett proposed his theory of emerging adulthood, which argues for a distinct developmental stage—"emerging adulthood"—that he considers qualitatively different from adolescence and young adulthood. Arnett argues that the stage of emerging adulthood generally spans the age ranges of the late teens through the twenties, but applies most specifically to 18- to 25-year-olds (Arnett, 2000). Emerging adulthood is argued to be the result of changing demographics in industrialized and post-industrialized societies that allow for an extended time of explorations after finishing secondary education.

Emerging Adulthood As A Distinct Developmental Period

In 1994, Arnett and Taber attempted to identify the point in which one leaves the developmental stage of adolescence and enters young adulthood. Previous literature assessing markers of adulthood have most commonly included role transitions such as completing education, marriage, and having children (Benson and Furstenberg, 2006). These markers were likely derived from standards set in the 1950s –1960s (Beck, 2016). It is argued the economic environment of post-war America allowed for people (particularly White males) to obtain relatively high paying jobs with or without a college degree. This facilitated earlier marriages and child rearing, roles that people associated with reaching adulthood. Arnett and Taber (1994) reviewed studies of national statistical data on role transition markers (such as age of marriage, age of birth of the first child, and educational enrollment) from 1890–1993 in America. They reviewed studies assessing generational trends among role transition markers using the statistical term "spread," "to refer to the period of years it takes 80% of the members of a cohort to make a particular transition" (Arnett and Taber, 1994, p. 526-527). From their review they observed the change in demographics in America over the span of approximately 100 years, noting that people were staying in formal education longer and establishing independent households later. Furthermore, the authors argue that in America, adulthood tends to be defined on an individual level (when someone believed he/she has reached adulthood) rather than by social markers, and speculated this was due to the value placed on independence. Based on their speculation (as level of value placed on independence across Western cultures was not empirically tested) the authors then concluded the change from adolescence to adulthood in Western societies is made through a gradual transitioning process they termed "emerging adulthood".

Although the conclusions Arnett and Taber (1994) drew from their review were fairly speculative, the authors bring our attention to the wide variability in the transition from

adolescence to adulthood across cultures. From their review of historical patterns of role transition markers in many non-Western cultures (such as Morocco, Inuit societies, and Sambia) they found the types of role transitions and the age at which they are accomplished vary widely by culture. For example, in many of these cultures it was common for females to marry soon after puberty and to gain adult status at this time. But even in these non-Western cultures, the traditional timing of transitioning to adulthood seems to be extending (Arnett & Taber, 1994). The authors appear to suggest transitions into adulthood are taking longer across cultures. However, it is unclear as to whether the authors were arguing emerging adulthood is experienced cross-culturally.

After six more years of investigating this process Arnett (2000) proposed a comprehensive theory of emerging adulthood as a new developmental stage. The emergence of this new stage came out of the observation that the age of experiencing role transitions (which have commonly been associated with becoming an adult in American culture by people who were raised in the 1950's and 1960's (Beck, 2016)), such as marriage and birth of the first child, are increasing over the course of history. For example, the median age for marriage for women in 1960 was 21-years-old, whereas today it is 30-years-old (Arnett, 2000). Males follow a similar trend. According to Arnett, young people in today's industrialized societies are also delaying having their first child until their late twenties and early thirties. Arnett describes three main contributors to this finding. First, the invention of the birth control pill in the mid 1960's allowed for more control over the timing of pregnancy. Second, women have more opportunities in society today, such as pursuing higher education and career paths, than in previous generations. Third, both men and women are pursuing further education for occupational goals. So, if people today are postponing role transitions does that mean they are putting off entering adulthood as

well? Arnett would suggest it is not so much intentionally postponing adulthood, as it is the experience of gradually transitioning into an adult that typically occurs between age 18 and 25.

It is important to note Arnett does not claim emerging adulthood is universal, but acknowledges it is afforded to people in industrialized or post-industrial societies. For example, a cross-cultural study, Schlegel and Barry (1991) showed only 20% of 186 non-Western cultures surveyed demonstrated an extended "youth" period. On the other hand, developed countries in the West (such as the United States and Denmark) as well as those in the East (such as Japan) are typically afforded the emerging adulthood period.

In addition to acknowledging cultural constraints of emerging adulthood, Arnett also suggests that those in middle to high socioeconomic brackets more commonly experience emerging adulthood, because their financial resources allow for prolonged explorations (Arnett, 2004). This view is supported by the results of Bynner's (2005) post-hoc analysis on cross-sequential data following three cohorts born in 1946, 1958, and 1970. Bynner (2005) found certain experiences characteristic of emerging adulthood, such as later marriage and pursuing higher education, was commonly experienced by those who had access to more financial resources than those who did not. Additional empirical evidence related to factors that influence the experience of emerging adulthood is addressed later in this manuscript.

Five Features of Emerging Adulthood

Arnett delineates five distinct features typically experienced by emerging adults: (a) extended identity explorations, (b) instability, (c) self-focus, (d) feeling in-between, and (e) possibilities (Arnett, 2004). Each of these features describes the unique characteristics of emerging adulthood.

Extended identity explorations. Emerging adulthood as a period of extended identity exploration can be seen as an extension of Erikson's theory. Erikson (1968) proposed identity exploration to be the main psychosocial conflict of adolescence. Arnett (2000), however, suggests that the identity conflict is not typically resolved by the end of adolescence and that people continue to struggle with this conflict throughout their twenties. Three areas within identity development that are particularly explored during emerging adulthood are love, work, and worldview (Arnett, 2004). More specifically, Arnett believes the focus of exploring love during emerging adulthood evolves from the fleeting romance of adolescence to a tool of identity development. Emerging adults commonly ask themselves, "What kind of person am I, and what kind of person would suit me best as a partner through life?" (Arnett, 2004, p. 9). It is clear that these questions emphasize self-reflection and discovery.

The trend of fleeting explorations in adolescence to identity related explorations in emerging adulthood seems to also apply to work experiences. Work in adolescence tends to consist of part-time employment and typically is "unrelated to the work they expect to be doing in adulthood" (Arnett, 2004, p. 9). Whereas work in emerging adulthood tends to be directed to preparing the individual for a career path that coincides with his/her identity. Emerging adults approach explorations in work with the questions, "What kind of work am I good at? What kind of work would I find satisfying for the long term? What are my chances of getting a job in the field that seems to suit me best?" (Arnett, 2004, p. 9). These questions reflect an individual's motivation to pursue a career that compliments his/her identity.

Emerging adulthood also tends to be a time for exploration in worldview, i.e., how people make sense of the world. We can understand the development of worldview during this period through the lens of cognitive development. According to Piaget (1972), most adolescents and

adults are capable of formal operational thought. The stage of formal operations is characterized by liberation from the cognitive limitations of childhood and the newfound ability to think abstractly and consider hypothetical situations (Piaget, 1972). However, adolescents have been found to have cognitive limitations of their own. For example, adolescent thought tends to be dualistic (e.g. "right" vs. "wrong", "good" vs. "evil") (Perry, 1970). Cognitive scientists describe "post-formal thought" as characterized by the ability to synthesize dialectical thought by producing a compromise between competing ideas (Arnett & Maynard, 2013), which allows adults to consider multiple perspectives and generate their own conclusion. Arnett (2004) proposes that most people entering emerging adulthood at around 18-years-old do not yet have a fully formed worldview, but most people do by the end of emerging adulthood. This coincides with the view that cognitive development continues beyond adolescence and suggests older emerging adults have more cognitive tools to fully form a coherent worldview. Arnett (2004) notes that although there is great variability in the beliefs and values of emerging adults, the common thread is the importance of deciding those beliefs and values for themselves. Overall, it is clear identity exploration continues beyond adolescence and is prevalent during the period of emerging adulthood.

Instability. The second feature of emerging adulthood is instability. Arnett (2004) believes extended identity exploration leads to constant revision of emerging adults' goals and direction for their lives, which in turn causes instability in many aspects of the emerging adults' life, such as their educational or career decisions, or commitment to interpersonal relationships and residence. For example, an emerging adult who decides to attend college might move out of his/her family's home, but upon graduating move back in with his/her family while looking for employment. In fact, approximately 40% of emerging adults move back in with their parents

transitionally (Arnett, 2000). Furthermore, Arnett (2004) reported it is common for emerging adults to try up to seven different jobs before deciding where to pursue stable employment. It is also common for emerging adults to not have a stable residence or work environment. While older adults may see this as reluctance to grow up, Arnett (2004) argued that instability is a manifestation of the emerging adult' extended identity explorations (a bi-product of the first feature of emerging adulthood).

Self-focus. Emerging adulthood is also characterized as a time when young people focus on themselves. Arnett (2004) argued that because the age of marriage and having children is later today than in previous generations, emerging adults do not typically have to consider others when making decisions and can make decisions based on what is best for them. These decisions can vary between mundane (such as where to eat dinner) to important (such as moving to a new state or changing career paths). Arnett (2007) argued that this time of being self-focused should not be confused with the connotations of being self-centered. Rather, emerging adults are working on their self-development (e.g., educational and occupational goals) through making decisions based on their own aspirations.

Possibilities. Another feature of emerging adulthood is characterized as "the age of possibilities" (Arnett, 2004). According to Arnett, emerging adulthood "tends to be an age of high hopes and great expectations" (2004, p. 16). Emerging adults are typically no longer under the jurisdiction of their parents and are able to make decisions for themselves concerning myriad domains (e.g. financial, residential, educational, relational, and occupational). American culture provides a foundation for the age of possibilities early in the lifespan. Generally, children are taught from a young age to "reach for the stars" and "follow your dreams." This implies the options for career paths as one grows older are limitless. Emerging adults are expected to

evaluate the possibilities they are interested in and choose which path they want to pursue. As mentioned previously, this decision is typically made in light of identity. Arnett (2004) argued emerging adults have the widest range of potential opportunities in many domains of their life, since they do not have to comply to parental demands like adolescence do, or consider the expectations of others (such as a spouse or employer) like young adults do.

Feeling in-between. Finally, emerging adulthood is characterized by "feeling in-between," as in no longer feeling like adolescent but not fully feeling like an adult either. Within the field of emerging adulthood the feature of "feeling-in-between" has received a lot of attention. Over a span of approximately fifteen years Arnett conducted multiple studies investigating perceptions of adulthood. His original study, published in 1994, surveyed 346 college students, ages 18- to 23-years-old. Arnett posed two chief questions to his participants: a) "Do you believe you have reached adulthood?" in which participants could respond "yes", "no", or "in some respects yes, in some respects no", and b) asked them to indicate from a list of 40 markers which they believed to be necessary for achieving adult status. Arnett (1994) found that almost 63% of the sample consented they had reached adulthood in some respects but not others. Only 27% responded "yes" and 10% responded "no." This suggests the majority of college students did not believe they had fully reached adult status. In regards to the second question, Arnett (1994) generated a list of 40 markers of adulthood (derived from work in multiple fields such as sociology, anthropology, and psychology). These markers were categorized into seven domains:

1) *Role Transitions* (e.g., no longer living with parents, married, employed full-time, etc.)

2) *Cognitive* (e.g., decide personal beliefs independently from parents)

3) *Emotional* (e.g., obtain equal status with parents, control over emotions, committed romantic relationship, etc.)

4) *Behavioral* (e.g., avoid illegal drugs, avoid petty crimes, contraception use when intending to not conceive, etc.)

5) *Biological* (e.g., capable of bearing/fathering children, grown to full height, etc.)

6) *Legal/chronological* (e.g., reached 18-years-old, 25-years-old, 30-years-old, etc.)

7) *Responsibilities* (e.g., accept responsibility for consequences of actions, keeping family safe, supporting family financially, etc.).

Participants were asked to, "indicate whether you think the following must be achieved before a person can be considered to be an adult." Participants responded to the categorical options of "necessary for adulthood" or "not necessary for adulthood". Arnett (1994) found that contrary to popular belief, markers under the category of *Role Transitions* were not highly valued for reaching adulthood (condoned by less than 30% of the sample). More specifically, Arnett (1994) found only 15% of participants condoned marriage as a necessary marker, 12% condoned having children as a necessary marker, and 27% condoned full-time employment as a necessary marker. The most frequently endorsed marker of adult status from the role transition domain was becoming financially independent from one's parents (66% condoned this marker). Interestingly, the top three most commonly condoned markers seemed to characterize responsibility and independence; each of these markers received more than 70% agreement from the sample. The top three most frequently endorsed markers were as follows: (a) "accept responsibility for the consequences of my actions" (90% condoned), (b) "establish relationship with parents as an equal adult" (72% condoned), and (c) "decide on beliefs and values independently from parents or other influences" (80% condoned) (Arnett, 1994).

A few years later, Arnett (1997) conducted a second study aimed to compare the original study to a new sample of 140 participants in a wider age range of 21- to 28-year-olds. Although the racial and gender distributions of the two samples were quite similar, there were multiple noteworthy demographic differences. First, all of the participants in the original study were enrolled in an undergraduate college program, whereas only 36% of the participants in the second sample were enrolled in college. Second, only 1% of the sample in the original study was married, and 60% of the sample in the second study was married. Third, only 2% of the original sample had at least one child, whereas 27% of the second study had at least one child. Fourth, 52% of the original study were not employed, whereas only 9% of the second sample were not employed (Arnett, 1997). With disparate samples the results of the second study had the potential to contribute to the external validity of the original study. Results of the second study replicated the original study in some ways but not others. In regards to the first question of whether they believed they had reached adulthood, the majority of the second sample indicated that they had fully reached adulthood (63%), in contrast to the 27% who said yes in the original study (see Figure 2). For the relatively older sample in the second study, more people agreed with fully reaching adulthood compared to the younger sample in the original study who more commonly indicated "in some respects yes, in some respects no." In regards to the second question of indicating which of the 40 markers are necessary for adulthood, the 1997 sample followed a similar pattern as the original 1994 study. Markers of *Role Transitions* (e.g. marriage, having at least one child, and full-time employment) all received fewer than 20% endorsement. Similar to the 1994 study, the marker of "financially independent from one's parents" was highly endorsed as necessary for achieving adult status and was even more highly condoned by the 1997 sample (73%). Consistent with the 1994 study, markers indicating independence and responsibility most

consistently received the highest ratings. In fact, the same top three markers were indicated as necessary for reaching adulthood: (a) “accept responsibility for the consequences of my actions” (94% condoned), (b) “establish relationship with parents as an equal adult” (69% condoned), and (c) “decide on beliefs and values independently from parents or other influences” (78% condoned), suggesting that emerging adults’ response to the first question “have you reached adulthood?” may not have been heavily influenced by their demographic backgrounds, such as marital status and educational status. Since the 1997 study included a wider age range of individuals, it is possible this partly accounted for the distinct perception of adult status between the two studies. Furthermore, Arnett (1994, 1997) relied on descriptive percentage differences, rather than directly testing statistical differences among the frequency responses, an oversight that may be particularly problematic when percentage differences were relatively small and when sample sizes varied across studies.

Perhaps the most consistent finding in Arnett (1994) and Arnett (1997) was emerging adults of different ages tended to agree on which markers constitute reaching adult status. To extend Arnett (1997), Arnett (1998) conducted structured interviews with the participants from the Arnett (1997) sample, which allowed for insight into the reasoning for the participants’ answers to the questions concerning perception of adult status. In regards to the highly endorsed marker “accept responsibility for the consequences of your actions,” interviewees not only expressed responsibility as necessary for adulthood but specifically responsibility *in reference to themselves*. The clear emphasis on self-focused responsibility among American emerging adults was at odds with findings from studies conducted in traditional cultures where responsibility endorsed by young people is largely other-oriented and typically fulfilled by protecting one’s family, providing resources, and contributing to the next generation through child rearing (Arnett,

1998). To account for these discrepancies, Arnett (1998) suggested the categories of markers of adulthood should be adapted in future research to reflect the emphasis on autonomy and self-sufficiency by creating a category indicating individualism. Specifically, markers of independent decision-making, accepting responsibility for one's self, and financial independence are indicative of the suggested category. In addition, the interviews also revealed participants' perceptions of becoming an adult were not related to gender therefore two gender-specific markers were removed.

Building on Arnett (1994, 1997, 1998), Arnett (2001) compared the perception of achieving adult status in adolescents, emerging adults, and adults using a revised measure. The adolescent sample consisted of 171 13- to 19-year-olds, the emerging adult sample consisted of 179 20- to 29-year-olds, and the adult sample consisted of 165 30- to 55-year-olds. Demographic variables of the adolescents in this sample included 89% in school full-time, 2% married, and 6% had at least one child. Demographic variables of the emerging adults in this sample included 46% in school full-time, 25% married, and 15% had at least one child. Demographic variables of the adults in this sample included 4% in school full-time (but 21% had at least some college and 55% had a college degree), 65% married, and 79% had at least one child.

Following the protocol used in Arnett (1994, 1997, 1998), participants were first asked, "Do you think that you have reached adulthood?" and were required to respond in a categorical manner of "yes", "no", or "in some respects yes, in some respects no." As shown in Figure 1, adolescents had the highest frequency of answering "no" (approximately 33%), and adults had the highest frequency of answering "yes" (86%). Emerging adults had the highest frequency of answering, "in some respects yes, in some respects no" (50%), but adolescents were close behind with 48% condoning this response (Arnett, 2001). Through Pearson Chi-Square analysis Arnett

found the proportion differences between these age groups in response to this question were statistically significant.

In order to investigate the differences in perceptions of adult status among different age cohorts, in the second question Arnett (2001) asked participants to indicate which markers were necessary for achieving adult status, using a revised checklist that included 38 markers reorganized under seven new categories. Arnett (2001) justified the reorganized categories of markers based on results from the following three studies. First, Greene and colleagues (1992) asked participants to provide qualitative responses to an open-ended question concerning what characteristics make a person an adult. Results revealed participants most frequently indicated *being responsible*, *making decisions on one's own*, and *financial independence* as characteristic of adults. Second, Scheer et al. (1996) asked participants to indicate (out of eight options) which was the most important marker for transitioning into an adult. *Taking responsibility for one's actions*, *making independent decisions*, and *becoming financially independent* were most frequently listed among participants. Third, as mentioned above, Arnett (1994) found that less than 30% of the sample condoned *Role Transitions* as necessary for adulthood, whereas markers indicating responsibility and independence (such as "accept responsibility for the consequences of my actions", and "decide on beliefs and values independently from parents or other influences" were endorsed in at least 70% of the sample. Arnett (1998) argued the results of the aforementioned studies "…converge so strongly as to suggest the existence of a persuasive, coherent conception of the transition to adulthood among young people in American majority culture…" (p. 301), and proposed seven revised categories as follows:

1) *Individualism* (e.g., accept responsibility for the consequences of your actions, decide personal beliefs independently of parents, and financially independent from parents). These

markers were moved from their original categories of *Responsibilities*, *Cognitive*, and *Role Transitions* respectively.

2) *Family Capacities* (e.g., capable of keeping a family physically safe and capable of caring for children). Both markers were previously in the category of *Responsibilities*.

3) *Norm Compliance* (e.g., avoid using illegal drugs, and avoid committing petty crimes). Both of these markers were previously in the category of *Behavioral*.

4) *Biological Transitions* (e.g., capable of bearing children, and grow to full height).

5) *Legal/Chronological* (e.g., reached age 18).

6) *Role Transitions* (e.g., married, have at least one child, finished with education, and employed full-time).

7) *Other* (e.g., make life long commitments to others, and learn to always have good control of your emotions). These markers were previously in the categories of *Responsibilities* and *Emotional* respectively.

Arnett (2001) used the categories as seven subscales and calculated a mean percentage of endorsement for each. Overall he found that across the three age groups, participants endorsed the categories in the same order regarding their necessity for achieving adulthood: *Individualism*, *Family Capacities*, *Norm Compliance*, *Biological Transitions*, *Legal/Chronological*, and *Role Transitions*. The majority of all three age groups highly endorsed the category of *Individualism*: adolescents (72%), emerging adults (76%), and adults (75%). The least number of participants in each age group endorsed the category of *Role Transitions* as necessary for adult status: adolescents (26%), emerging adults, (19%), and adults (21%). These findings were in line with Arnett (1998), which provided further support for similar perception of key markers of adulthood among adolescent, emerging adult, and adult groups.

While the rate of endorsement of key markers of adulthood was similar among adolescents, emerging adults, and adults, the comparisons between age groups within categories revealed differences. Specifically, Arnett (2001) calculated mean subscales scores for each age group in each category (the response "yes" was coded as a 1, whereas the response "no" was coded as a 0), and found a significant difference in the frequency of condoning *Role Transitions* among the three age groups; adults rated *Role Transitions* as marginally less important than did adolescents; whereas, there was no significant difference between emerging adults and adults. Unfortunately, the difference between adolescents and emerging adults was not reported.

Arnett (2003) conducted the procedures described above with an ethnically diverse sample of 574 (African American, White, Latino, and Asian American) emerging adults aged 18- to 29-years-old. Based on descriptive statistics of percentages, African Americans most frequently answered "yes", followed (in order) by Latinos, Asian Americans and Whites in reference to the question, "Do you think that you have reached adulthood?" However, ANCOVA analysis revealed that once socioeconomic status was controlled for no significant differences were found among different ethnic groups. Across ethnicities, Arnett generally replicated his past results, with some differences that might be attributed to the large age range within the sample. Regarding the question "Do you think that you have reached adulthood?" approximately 44% answered "yes", approximately 7% answered "no", and approximately 49% answered "in some respects yes, in some respects no" (Arnett, 2003). As shown in Figure 2, these percentages seemed to fall between results found in the Arnett (1994) and Arnett (1997) studies. It is possible that younger emerging adults in the 2003 sample parallel results of the younger sample in the 1994 study; whereas, the older emerging adults of the 2003 study parallel results of the older

sample in the 1997 study, therefore averaging out results derived from age ranges closer to the poles, suggesting that age may be related to perceptions of one's own adult status.

Regarding the investigation of which markers emerging adults perceive to be necessary for reaching adult status, Arnett (2003) used a measure similar to the one employed in his 2001 study, but rearranged some of the items into new categories. The updated measure had two main changes. First, the category of *Individualism* was renamed "*Independence*." Second, the category of *Other* was renamed "*Interdependence*" and included items such as "make life long commitments to others," "learn to always have good control of your emotions," and "become less self-oriented" (Arnett, 2003). Arnett did not offer an explanation for the reorganization of these categories. This is concerning as he does not provide factor analysis to support the item loadings within the categories, therefore may be subject to confirmation bias. Psychometric analyses showed the category of *Independence* had the lowest (and problematic) estimate of internal consistency of .42, whereas the category of *Norm Compliance* had the highest estimate of internal consistency of .83. When asked which of these markers were necessary for becoming an adult results replicated the findings of Arnett (1994; 1997; 2001) with the highest agreement across ethnic groups endorsing markers within the category of *Independence*, along with the marker of "become less self-oriented" in the *Interdependence* category. Similar to previous studies, *Role Transitions* received the lowest endorsement across ethnic groups. However, a few significant differences between ethnic groups were uncovered. African Americans, Asian Americans, and Latinos were significantly more likely than Whites to endorse the categories of *Role Transitions* and *Family Capacities* as necessary for achieving adult status (Arnett, 2003). Also, African Americans were significantly more likely than Whites to endorse the category of *Norm Compliance*, Asian Americans were significantly more likely than Whites to endorse the

categories of *Norm Compliance* and *Interdependence*, and Latinos were significantly more likely than Whites to endorse the categories *of Biological* and *Chronological Transitions*. This shows initial evidence that ethnicity may play a role in perceptions of adult status and needs to be considered when conducting research in this field.

Critiques of Emerging Adulthood's Theoretical Framework

Arnett (2004) claims emerging adulthood to be a theory of development. Critics of the theory of emerging adulthood argue that it is not an appropriate *developmental* theory. For example, Côté (2014) makes a point that theories claiming to describe human development need to describe some process that is changing over time. Although Arnett (2001) provides cross-sectional evidence there is a lack of longitudinal research investigating how the features of emerging adulthood change within an individual over time. Hendry and Kloep (2010) recognize Arnett's observation that people in their late teens and early twenties experience demographic change (such as moving out of the family house), but argue demographic changes do not necessarily coincide with changes in *human development* (which should be fairly universal) and therefore emerging adulthood should not be considered a unique life stage.

Other critics of the theory of emerging adulthood believe the observations supporting the theory more appropriately fit into a previously identified life stage. Steinberg (2014) believes the theory of emerging adulthood is unnecessary and people experiencing the observations made by Arnett are actually in an extended period of adolescence. The idea of a prolonged or extended adolescence was proposed over twenty years earlier by Elliott and Feldman (1990) who suggested the developmental stage of adolescence could last into the early twenties. They state that prolonged adolescence allows for more freedoms. They believe a lengthened adolescence occurs when people extend their time in formal schooling, and therefore, rely on parents longer.

Steinberg believes the transition from adolescence to adulthood occurs once adult roles start to be embraced. But what constitutes adult roles? Across Arnett's work, perceived markers of adulthood today are shown to be more intangible (such as taking responsibility for one's actions) and not based on markers of *Role Transitions* (such as finishing one's education). Also, it is unclear whether Steinberg believes a person enters adulthood once *one* adult role is embraced, or all adult roles are embraced.

Evidence presented by Arnett's work insinuates qualitative differences experienced by emerging adults makes them unique from adolescents and young adults, which supports the idea of a distinct life stage. Arnett (2000) explicitly argues that emerging adulthood is not just an extended adolescence. His argument is people in adolescence go through similar experiences that emerging adults are no longer experiencing. For example, adolescents are typically attending high school, going through puberty, and the overwhelming majority live with their parents. Arnett also argues that 18-years-old is a good cut-off for the end of adolescence as the experiences listed above are no longer standard, and also that 18-year-olds (in the United States) gain legal privileges such as voting. Arnett (2004) argues young adulthood is not an appropriate term for emerging adults either as it suggests one has reached a stage of adulthood. As described previously, Arnett's research shows many people in their late teens and twenties do not consider themselves as reaching full adult status. Arnett also claims, "*Emerging* is also a better descriptive term for the exploratory, unstable, fluid quality of the period" (2004, p. 18). Furthermore, Arnett contends "young adult" better describes people in their thirties as they show more stability in their lives, through their residences, jobs, and relational commitments.

Arnett's argument for emerging adulthood as a distinct developmental stage seems compelling as it is backed by demographic differences between adolescents, emerging adults and

young adults. However, this type of evidence is not sufficient to claim emerging adulthood is a new stage in human development. To make this type of assertion, one needs to provide longitudinal evidence that characteristics applicable to emerging adulthood change through stage-like processes from adolescence to emerging adulthood, to young adulthood. Furthermore, the evidence for emerging adulthood as a theory of human development is insufficient, as cultural constraints seem to influence the experience of the features of emerging adulthood. The demographic change over time Arnett (2000) describes as an antecedent to the stage of emerging adulthood is culturally bound.

When investigating processes related to emerging adulthood one is making the assumption the stage of emerging adulthood is a valid developmental period. Two (out of the five) features of emerging adulthood concern a person's *perception* of his/her current life situation. For example, the feature of Feeling In-Between concerns one's *perception* of whether one has reached adulthood or not. Moreover, the feature of Possibilities concerns one's *perception* the options for one's future. A problem with measuring self-perception is that it may not reflect the true experience of that construct. For example, people may perceive themselves as fully reaching adulthood, but may not be considered an adult in the minds of others (such as parents). Currently, there is not a set of observable behaviors or characteristics that objectively define "adulthood" to which self-perceptions can be compared. Moving forward with the investigation of the influence of attending college on the experience of emerging adulthood I am making the assumption that emerging adulthood is a legitimate developmental stage.

The Role of College in Emerging Adulthood

Just as the demographic trends of marrying and having children later in life contribute to a culture supporting the experience of emerging adulthood, the growing demographic of young

people in the United States attending college may also contribute to the likelihood of experiencing emerging adulthood. If this is the case, it may be argued that young people who attend college are on a different developmental path than those who do not attend college. Attending college is noted throughout the emerging adulthood literature as affording a unique experience. However, this conclusion seems to be mostly derived from theoretical speculation. For example, Arnett and Tanner (2011) stated, "obtaining or not obtaining further education after secondary school is a crucial dividing point in emerging adulthood" (p. 33), a proposition that seems to be partly based on Goldscheider and Goldscheider's (1999) idea of "semi-autonomy" that individuals attending college experience some of the responsibilities of adulthood, but are not fully self-sufficient. While many college students may live on campus and pay their rent as part of their tuition, often with financial help from parents, many of their non-college peers have to work full time to pay for their monthly bills for food and rent independently.

It can also be inferred that experience of college may influence emerging adulthood through affording further psychological moratorium. Munro and Adams (1977) compared college students and working youth on four domains of identity (occupational, political, religious, and ideological), based on Marcia's (1966) model of ego identity status formation. In regards to occupational identity, there was no difference in status formation between college students and working youth. However, results revealed significantly more working youth were classified as *achieved* in regards to political, religious, and ideological identity, whereas more college students were considered *diffused*. Munro and Adams (1977) suggested college students may be utilizing the college experience to form a stable identity, i.e., reaching identity achievement, or that college students may be avoiding identity changes that working youth had already experienced. These explanations were speculative and not empirically tested.

With a few exceptions, limited studies have directly compared college students and their non-college peers on measures assessing the experience of emerging adulthood. For example, Reifman, Arnett, and Colwell (2007) used the Inventory of Dimensions of Emerging Adulthood (IDEA) to compare college students and their non-college peers on the five features of emerging adulthood discussed above. The only significant difference uncovered was that college students more strongly endorsed possibilities than those who were not attending college. Hendry and Kloep (2010) explored the experience of emerging adulthood in a non-college sample (individuals not currently attending college) of Welsh individuals of 17- to 20-years-old. The authors conducted semi-structured interviews intended to touch upon each of the features of emerging adulthood. Their qualitative analysis identified three groups based on similar themes that emerged through the interviews: (a) *traditional emerging adults* who experienced an extended period of exploration, (b) *prevented adults* who lacked resources necessary for achieving adult status, and (c) *early maturing adults* who reached adult status due to a factor outside of their control (e.g. death of a parent). According to Hendry and Kloep (2010) the traditional emerging adults were more commonly middle class and pursuing higher education, whereas the prevented adults were less advantaged– they did not have access to resources, such as higher education, housing outside of the family, and opportunity to engage in desired jobs. Finally, Crocetti, et al. (2015) assessed the experience of emerging adulthood in a cross-cultural sample of 2,472 emerging adults ages 18- to 30-years-old from Japan and Italy who were either workers or students. Crocetti and colleagues (2015) validated a shorter version of the IDEA (the IDEA-short form), and demonstrated measurement invariance across nationality, gender, and occupational groups in their study. Within the Italian sample, workers scored significantly lower than college students on four out of the five features (extended identity explorations, instability,

feeling in between, and possibilities), and scored higher on the feature of self-focus. Different results were uncovered for the Japanese sample. Japanese workers scored significantly lower than college students on three of the five features of emerging adulthood (extended identity exploration, feeling in-between, and possibilities), and did not score significantly higher on any feature. This provides initial evidence suggesting certain features of emerging adulthood may be experienced differently by college students and non-college students, and that these differences are likely influences by cultural contexts.

A few studies have also specifically focused on the non-college population of young people. The William T. Grant Foundation Commission on Work, Family, and Citizenship (1988) termed the non-college population of young people as "the forgotten half" due to the convenience of recruiting college youths for scientific investigations (see Table 1). Furthermore, studies that utilized community samples were often conducted in cities harboring a university, which likely included a significant number of college students or youth with some years of college experiences. For instance, Arnett's (2001, 2003) samples included participants of varying education levels, however, many of whom had at least some college experiences (see Table 1). Unfortunately the roles of these college experiences may play in perceptions of emerging adulthood were not specifically examined.

Comparing Perceptions of Emerging Adulthood Between College and Non-College Youth: Confounding Variables

As emerging adults college and non-college youth could differ in various demographic factors such as age, gender, ethnicity, and socioeconomic status, which need to be taken into account when comparing the differences in their perceptions of emerging adulthood.

Age

Age seems to play a role in the experience of certain features of emerging adulthood. While emerging adulthood is thought to be most applicable to 18- to 25-year-olds, it may continue through the late 20s. Molgat (2007) used semi-structured interviews to investigate the perception of adult status among 45 older emerging adults of 25- to- 29-years-old. When responding to the question "Do you have the impression of being an adult?" 53% of the participants answered "in the affirmative", 13% answered "in the negative", and 33% answered "both" (Molgat, 2007, p. 502). Compared to Arnett's (1994) findings derived from emerging adults aged 18- to 23-years, 26% more emerging adults in Molgat's study agreed with reaching adulthood. These findings highlight the importance of matching age when comparing perceptions of emerging adulthood between college and non-college youth.

Gender

Perceptions of emerging adulthood may also vary across gender. Using an adapted version of Arnett's (2003) measure, Barry, Madsen, Nelson, Carroll, and Badger (2009) found women of 18- to 26-years-old years old were more likely to affirm the categories of *Interdependence* (e.g., "committed to long-term love relationships") and *Norm Compliance* (e.g., "avoid illegal drugs") than men, but were less likely to affirm the category of *Role Transitions* (e.g., "finish education"). Nelson et al. (2007) used an adapted version of Arnett's (2003) measure to show that emerging adult women of 18- to- 25-years-old acknowledged *Norm Compliance* and *Relational Maturity* (e.g. "Accept responsibility for the consequences of your actions") as more important for adult status than men of similar ages. In regards to the question of whether people feel they have reached adulthood, women of 25- to 29-years-old were more likely to respond in an ambiguous sense of yes and no than men, whereas men were more likely to respond "no" to whether they have reached adulthood than women (Molgat, 2007). It should

be noted that all the gender differences reported in these studies were based on descriptive statistics in percentages, rather than inferential analyses. Employing the IDEA, Reifman, Arnett, and Colwell's (2007) study with an American sample revealed females scored significantly higher on the dimension of Self-Focus than males. It seems there are gender differences in perceptions of adult status as well as within the features of emerging adulthood. However the consistency of these differences is unclear as results analyzing gender differences in relation to emerging adulthood are not reliably shown across studies (with the possible exception of females more frequently endorsing *Norm Compliance* markers as necessary for achieving adult status).

Ethnicity and Culture

One question is whether Arnett's theory is generalizable beyond a primarily European American sample. Arnett (2003) examined perceptions of adulthood in an ethnically diverse sample. He collected a sample of 574 individuals (approximately 19% White Americans, 21% African Americans, 17% Latinos, and 43% Asian Americans) between the ages of 18- to 29-years-old. As described previously, he found differences between ethnic groups in regards to the question "do you believed you have reached adulthood?" were not significantly different once socioeconomic status was considered. However, significant differences between ethnic groups seemed to hold for markers deemed necessary for adult status, particularly concerning the categories of *Norm Compliance*, *Interdependence*, *Family Capacities*, *Role Transitions*, *Biological Transitions*, and *Chronological Transitions*.

Blinn-Pike, Worthy, Jonkman, and Smith (2008) developed a short-answer survey consisting of four questions requiring responses via Likert scale from 1 (strongly disagree) to 5 (strongly agree). The higher the score the more "adult" the participants were considered, and the lower the score the more "emerging adult" the participants were considered. In a sample of 302

European American and African American college students they found more African-Americans, but not European Americans, perceived themselves as an "adult" than perceived themselves as an "emerging adult." This evidence shows there are likely to be differences between ethnic groups when assessing perceptions of adult status. However, similar to gender, ethnic differences have not been widely replicated in relation to the experience of emerging adulthood, which calls for future studies to include ethnicity as a variable in analysis.

As mentioned previously, Crocetti et al. (2015) not only investigated gender differences in regards to the experience of the five features of emerging adulthood but also assessed cross-cultural differences between Japanese and Italian samples. Overall, Japanese participants rated higher on each of the five dimensions of emerging adulthood compared to the Italian sample. The authors noted the largest effect size between the two culture groups was on the dimension of Possibilities (e.g. having the opportunity to try new things, and perceive open choices), which may be due to clearer career paths and lower unemployment rates in Japan than in Italy. Alternatively, Japanese emerging adults also seemed to have more financial resources allowing for higher flexibility exploring various opportunities during emerging adulthood.

Socioeconomic Status

Overall, youth of higher SES backgrounds are more likely to attend college (Breen & Jonsson, 2005), an experience that may, on average, delay the timing of certain role transitions such as marriage and birth of the first child for two years (Amato, 2007). To the extent these role transitions are perceived to be markers of reaching adulthood, it seems plausible that perceptions of emerging adulthood may vary among youth of various SES backgrounds.

While recognizing the variations among youth of different SES backgrounds in relation to their college experiences and potentially perceptions of role transitions as markers of

adulthood, Arnett and Tanner (2011) downplayed the role SES in the experience and perceptions of emerging adulthood. Instead, they focused on similarities in psychological experiences among youth of different SES backgrounds. For example, Arnett and Tanner's (2011) review found in their previous studies participants of varying SES backgrounds tended to agree that markers of *Independence* were most necessary for reaching adult status. The feature of Possibilities was also endorsed across SES backgrounds. Unfortunately, Arnett & Tanner's argument was largely speculative, and was not based on statistical comparisons across SES groups.

The Current Studies

As illustrated in the review above, the extant literature on perceptions and experiences of emerging adulthood is limited in several ways. First, while attending college has been recognized as a key factor that may shape perceptions of emerging adulthood, few studies have directly compared college and non-college youths by taking into account their differences in biological and demographical backgrounds such as age, gender, ethnicity, and SES. Demographical backgrounds have been shown to play a role in the experience of emerging adulthood, but also influence college attendance. For example, according to Brown (2015) college enrollment dropped from 2008 to 2013, and this drop was steepest among individuals of low income compared to middle income and high income. Through this trend we see economic context influences college enrollment. In 2008 America was in an economic recession, and it seems when jobs are scarce enrollment increases, but when jobs are available college enrollment drops, especially among individuals of lower income. Second, the majority of the studies in the literature tended to be descriptive and relied on simple percentage comparisons rather than inferential statistics and hypothesis testing. Third, with one exception (Crocetti et al., 2015), the psychometric properties of existing popular measures of emerging adulthood were clearly

understudied and limited attempt has been made to examine factor structure and measurement invariance, two important attributes that are vital for measurement validity. Fourth, perceptions of emerging adulthood have been studied using self-reports and interviews that are susceptible to various subjective biases, particularly social desirability. It was unclear whether the answer to the question "Do you think that you have reached adulthood?" reflected an emerging adult's perception of his/her adult status, or his/her understanding of a desirable status that is consistent with family and societal expectations. Given these limitations, the aims of the current studies were to compare individuals attending college to their non-college peers on measures assessing the experience of emerging adulthood, and to investigate implicit attitudes toward adult status among emerging adults, in relation to their self-reported adult status. Age and socioeconomic status were evaluated as mediators in the relationship between educational group (college students vs. non-college youths) and the measures of emerging adulthood. Although the age range for emerging adulthood is ambiguous, the theory of this developmental period is still guided by age. Presumably, older individuals would be less likely to experience the features of emerging adulthood compared to younger individuals. Furthermore, socioeconomic status likely influences whether individuals are afforded with the opportunity to attend college, which may help explain the extent to which these educational groups experience the features of emerging adulthood.

CHAPTER 2: COMPARING COLLEGE STUDENTS AND NON-COLLEGE YOUTH ON EXPLICIT MEASURES OF EMERGING ADULTHOOD (STUDY 1)

Overview of Study 1

To address the first aim, Study 1 first investigated psychometric properties of the markers of adult status measure, including its factor structure and measurement invariance, and then compared college and non-college youths on their perceptions of emerging adulthood, after controlling for their age, gender, ethnicity, and SES backgrounds. Study 1 tested three hypotheses:

1. College students would rate higher on the five features of emerging adulthood than non-college youths.

2. Higher proportions of non-college than college youths were expected to perceive they have fully reached adulthood.

3. Markers of *Independence* were expected to be condoned most frequently and those of *Role Transitions* were expected to be endorsed least frequently by both college and non-college youths.

Study 1 Method

Participants

Participants included 153 American college students (105 female) and 153 American non-college youths (76 females). College students were operationally defined as currently attending a four-year college or university. Non-college youths (NCYs) were operationally defined as not currently attending (nor have ever attended) a four-year or two-year (i.e., community college) college or university, including individuals in the military and training for a

specific trade. Only participants between the ages of 18- to 29-years old were recruited. See Table 2 for additional demographic background information of participants.

Procedure

Participants were recruited using Amazon Mechanical Turk (MTurk), an online marketplace, and through convenience sampling techniques. Before beginning the survey the participants signed an online consent form. Participants were invited to fill out an online survey including the IDEA short-form and additional items pertaining to the perception of adult status.

A few concerns have been posed regarding the quality of data collected through MTurk. Paolacci, Chandler, and Ipeirotis (2010) found MTurk workers more closely match the demographics (particularly age, gender, and SES) of the general American population than college students do. Buhrmester, Kwang, and Gosling (2011) compared data quality from MTurk workers, online forums, and college samples and found data quality from MTurk workers did not differ from the other samples. Although MTurk workers may differ on demographics their results on dependent measures have not been found to significantly differ from college students (Goodman, Cryder, and Cheema, 2012).

Measures. The survey was organized into five sections: (a) The IDEA-short form, (b) Perceptions of adult status (whether they had reached adulthood [asked first] and how far they had progressed in transition to adulthood), (c) Markers of adult status (indicating which markers are necessary for people in general to reach adulthood and rank order of top five markers important for people in general to reach adulthood), (d) Achieved markers (which markers the participants had personally achieved), and (e) Demographics. The order in which the five sections were presented was randomized across participants to control for potential priming effects.

The IDEA-short form. The IDEA-short form is an overall assessment of the experiences argued to define emerging adulthood. The measure consists of 15 items (three items associated with each of the five features of emerging adulthood) in which participants respond via Likert scale from 1 (strongly disagree) to 5 (strongly agree). The measure was adapted and validated via confirmatory factor analysis by Crocetti et al. (2015) from the original IDEA (developed by Reifman, Arnett, & Colwell, 2007). This measure was validated in Italian and Japanese samples, but not American samples. Therefore, I first conducted preliminary analyses to examine psychometric properties and measurement invariance in American college and non-college youth samples.

Perceptions of adult status. Five survey items assessed perceptions of adult status.

To assess whether participants believe they have reached adulthood they were asked, "Do you think that you have reached adulthood?" Participants chose one of three possible responses: "Yes", "No", or "In some respects yes, in some respects no" (Arnett, 1994; 1997; 2001; 2003).

As an extension to the first question and in attempt to capture variability within the previous categorical answers, participants were asked, "On your transition to becoming an adult, how far have you progressed?" Participants indicated their response via slider scale from 0% completed (not at all an adult) to 100% completed (fully adult).

To measure which markers participants believed were necessary for achieving adulthood the questionnaire included a list of 39 markers for adult status (developed by Arnett, 2003). Participants were instructed, "Indicate whether you think the following must be achieved before a person can be considered to be an adult." The participants indicated one of two responses for each marker: "Yes" or "No".

Participants were asked to indicate which of the 39 markers they believed they personally had already fully achieved. Emulating Nelson and Barry's (2005) approach, participants were presented with 33 markers (adapted from the 39 markers of adulthood mentioned above) and asked to "indicate the extent to which the statement currently applies to you." The 39 markers of adulthood were reduced to 33, as some items are gender specific (e.g., a male participant would not respond to items specifically for females such as "if a women, become capable of bearing children"). Twenty-two items (such as financially independent from parents) were rated on a three-point Likert scale (1= very true, 2= somewhat true, 3= not true), and eleven items (such as have a child) required dichotomous responses: "Yes, applies to me" or "No, does not apply to me".

Finally, participants were asked to rank what they believed the top five most *important* markers (of the 39 markers previously presented) were for achieving adult status.

Demographic background. Participants were asked to indicate their ethnicity from the following list (choosing all that applied):

a. African American, Black, African, Caribbean

b. Biracial, Multiracial/ East Asian (Chinese, Korean, Japanese, etc.)

c. European American, White, Anglo, Caucasian

d. Hispanic American, Latino(a), Chicano(a), Mexican, Columbian

e. Native Hawaiian, American Indian, Alaskan Native

f. Pacific Islander (Micronesian, Melanesian, Samoan, etc.)

g. South Asian (Indian, Pakistani, Sri Lankan, etc.)

h. Southeast Asian (Vietnamese, Cambodian, Filipino, etc.)

i. Decline to answer

Participants were asked to indicate their age and gender (male, female, other) and report their socioeconomic status (as measured by parents' combined annual income). Participants' living situation (in parents' home, on campus, with a significant other, or independent), marital status (married or single), the number of children they have, and employment status (not employed, employed part-time, employed full-time) were also recorded.

Study 1 Results

First Hypothesis

The first hypothesis predicted college students would score higher on an overall measure of the extent to which college students experienced the five features of emerging adulthood (as measured by the IDEA-short form) compared to non-college youths (NCYs). The 15 items of the IDEA were summed and could range from 15-75, with higher scores indicating the participant more strongly experienced the features of emerging adulthood.

Preliminary Analyses.

***Confirmatory factor analysis*.** As a first step, confirmatory factor analysis (CFA) was performed on the IDEA-short form, developed by Crocetti et al. (2015), in the American sample. M*plus* (Muthén & Muthén, 1998-2012) was utilized to conduct this analysis using the maximum likelihood estimation. The CFA in the American sample replicated Crocetti et al.'s (2015) five-factor model with three indicators loading onto each factor (see Figure 3). Model fit was estimated via four indices: the comparative fit index (CFI), the Tucker-Lewis Index (TLI), the root mean square error of approximation (RMSEA), and the standardized root mean square residual (SRMR). Hu and Bentler (1999) suggest CFI and TLI values above .95 indicate acceptable model fit. Results from the American sample revealed CFI=.947, and TLI= .930. RMSEA values less than .06 and SRMR values less than .08 indicate acceptable model fit (Hu

and Bentler, 1999). Analysis with the American sample showed RMSEA= .063 and SRMR= .052.

Measurement invariance across educational groups. Analyses of measurement invariance were conducted to determine if the IDEA-short form was appropriate to use in both college student and NCY samples. First, configural invariance was analyzed to assess whether the five-factor model of experience of emerging adulthood applied similarly to both educational groups. The configural invariance model fit the data reasonably well: χ^2 (158)=229.49, $p < .001$: CFI= .95; TLI= .93; RMSEA= .05; SRMR= .06. Since configural invariance was established, a metric invariance model where item loadings were constrained to be equal across the two groups was tested. The metric invariance model also yielded reasonable fit: χ^2 (168)= 243.78, $p = < .001$; CFI= .95; TLI=.94; RMSEA= .05; SRMR= .07. Finally, a scalar invariance model, where item loadings and intercepts are constrained to be equal across both groups, was assessed. This model also had satisfactory fit: χ^2 (178)= 255.70, $p < .001$; CFI= .95; TLI= .94; RMSEA= .05; SRMR= .08. The results of the measurement invariance testing suggest college students and non-college youth's responses to the items were on the same scale, allowing mean-level differences in the latent construct of degree to which one experiences the features of emerging adulthood to be compared across educational groups.

Main Analyses

Multiple regressions. Plots of the residuals indicated that one outlier should be removed from the data. Three multiple regression analyses were used to test the first hypothesis that college students would score higher on the features of emerging adulthood compared to NCYs. Educational group was dummy coded in all regression analyses with college students=1 and NCY=0. In the first regression model, educational group (college students vs. NCYs) was

entered as the only predictor and was significantly associated with the IDEA total scores (*B*=3.75, *p*<.001), suggesting that college students had higher IDEA total scores (*M*=62.18, *SD*=7.92) than NCYs (*M*=58.43, *SD*=7.43).

In the second regression model, control variables were taken into consideration. Control variables included gender (male=1, female=0), marital status (married=1, 0=not married), ethnicity (white=1, not white=0), and the number of children they had. Their current living situation was also included as a control variable. This variable had three four levels: with parents, on campus, with a significant other, or independently (independently was the reference group for dummy coding). Employment status was another control variable. Educational status had three levels: full-time, part-time, or unemployed (unemployed was the reference group for dummy coding). Educational group was entered in the second block. When the control variables were added to the model, educational group remained a significant predictor of IDEA total scores, *B*=2.18, *p*=.038.

In the third regression model, all of the control variables were entered in the first block, and educational group was entered in the second block. To explore whether the differences found in IDEA scores between college and non-college youth were confounded by the group differences in age and SES, these two variables were entered in the third block. This analysis revealed educational group was no longer a significant predictor of IDEA scores. Socioeconomic status was a significant predictor in this model, with those of higher SES more likely to score higher on the IDEA, *B*=.75, *p*=.047 (see Table 3 for results).

***Mediation analysis*.** Because educational group became a non-significant predictor of IDEA scores once age and SES were added to the model, mediation analyses were conducted to test the mediating roles age and SES may play in explaining the group differences in the IDEA

scores between college and non-college youth. A double mediation analysis revealed both age and SES as mediators in the relation between educational group and scores on the IDEA (see Figure 4). The significance of these indirect effects was tested using bootstrapping procedures. These results indicated the indirect coefficient was significant for the path through age, *B*=1.25, 95% CI [.4029, 2.2259]. The results also indicated the indirect coefficient was significant for the path through SES, *B*=.33, 95% CI [.0282, .8479]. Thus, it seems that educational group was less influential in predicting IDEA scores when the mediators of age and SES were controlled for. That is, those who attended college were more likely to be younger, which in turn predicted higher scores on the IDEA. Those who attended college were also more likely to be of higher SES, which in turn predicted higher scores on the IDEA.

Second Hypothesis

The second hypothesis predicted higher proportions of non-college than college youths would perceive they have fully reached adulthood. The dependent measure ("perception of adult status") asked whether participants believed they had fully reached adulthood, with the response options of "yes", "no", or "in some respects yes, in some respects no." To address the hypothesis, first a Chi-Square test of independence was conducted comparing college students to NCYs on perception of adult status. Results revealed a significant relation between educational group and perception of adult status, $\chi^2(2)= 16.01$, $p<.001$, $\Phi=.229$ (see Figure 5 for frequencies), suggesting that perception of adult status differed between college and non-college youth. A descriptive table (Table 4) was also provided depicting the frequencies of "yes", "no", or "in some respects yes, in some respects no" responses between educational groups and demographic variables.

Binary logistic regression. To further understand the relation between educational group and perceived adult status a binary logistic regression was performed. Although the dependent variable had three levels ("yes", "no", "in some respects yes, in some respects no"), the data did not allow for multinomial logistic regression to be performed because goodness-of-fit assumptions were violated. This was due to the small amount of "no" responses, therefore, "no" responses were dropped, creating a dependent variable with two levels: "yes" (coded as 1) or "in some respects yes, in some respects no" (coded as 3). In the first regression educational group was the only predictor of perceived adult status in the model (B=.88, p<.001, OR=.05). In the second regression all of the control variables were entered into the model in the first block, and educational group was entered in the second block. Educational group was not a significant predictor after the control variables were added. In the third regression all of the control variables were entered into the model in the first block, educational group was entered in the second block, and age and SES were entered in the third block. Age was a significant predictor of the variance with older participants more likely to say "yes" compared to "no" than younger participants (B=-.18, p<.001, OR=.83) (see Table 5). Thus, it appears that the significant relation found between educational group and perception of adult status in Chi-Square analysis can be partly explained by varying demographics backgrounds between these two groups.

Multiple regressions. In an attempt to capture more variability in the dependent measure of perceived adulthood, participants were asked to indicate how far they believed they had progressed into adulthood on a continuous slider scale of 0% (not at all an adult) to 100% (fully adult). Three multiple regression analyses were conducted to assess the relation between educational group and progression to adulthood. In the first regression model, educational group was the only predictor and was significantly associated with the scores on progression into

adulthood, with NCYs (*M*=69.15, *SD*=22.83) more likely to say they had progressed further into adulthood than college students (*M*=63.24, *SD*=22.78), *B*=-5.92, *p*=.024.

In the second regression model, all of the control variables were entered in the first block, and educational group was entered in the second block. When the control variables were added to the model, educational group was no longer a significant predictor of progression to adulthood.

The third regression analysis included three blocks. All of the control variables were entered in the first block, educational group was entered in the second block, and the hypothesized mediators of age and SES were entered in the third block. The third model in this regression revealed educational group was not a significant predictor of progression into adulthood. Age was a significant predictor of progression into adulthood, with older participants believing they had progressed further than younger participants (*B*=1.93, *p*<.001). See Table 6 for results.

***Mediation analysis*.** A double mediation analysis was performed to further investigate the relation between educational group, age, SES and progression to adulthood. The relation between educational group and progression to adulthood was significantly mediated by age (see Figure 6). The significance of this indirect effect was tested using bootstrapping procedures. These results indicated the indirect coefficient was significant, *B*= -7.71, 95% CI [-10.9809, -5.1979]. Non-college youths were likely to be older, which in turn made them more likely to believe they had progressed further into adulthood. Although the link between educational group and SES was significant (with those attending college likely to be higher SES), there was not a significant relation between SES and progression to adulthood, nor an indirect effect of educational group to progression to adulthood via SES.

Third Hypothesis

The third hypothesis predicted markers of *Independence* would be condoned most frequently and markers of *Role Transitions* would be condoned least frequently by both college students and non-college youths. To test the third hypothesis, participants were asked to assess which of the 39 markers of adulthood are necessary for one to reach adulthood.

Preliminary analyses

Confirmatory Factor Analysis. As a first step, confirmatory factor analysis (CFA) was performed on the markers of adulthood (39 item) measure, developed by Arnett (2003), for the entire sample. M*plus* (Muthén & Muthén, 1998-2012) was utilized to conduct this analysis using the weighted least squares mean and variance-adjustment estimation. The CFA supported a seven-factor model (see Figure 7). This model fit the data reasonably well: CFI=.909, TLI= .901, and RMSEA= .064.

Measurement invariance across educational groups. Analyses of measurement invariance were conducted to determine if the markers of adulthood measure was appropriate to use in both college student and NCY samples. First, configural invariance was analyzed to assess whether the seven-factor model applied similarly to both educational groups. However, the configural invariance model fit the data unsatisfactorily. The lack of support for configural invariance suggests different factor structures for the two groups. Therefore it was not appropriate to compare mean differences between two groups. The acceptable fit of the seven-factor structure for the entire sample but lack of configural invariance suggest the seven factor structure may only be applicable to one educational group but not the other. To test this suspicion, separate CFAs were performed for each educational group. The seven-factor model fit the data for college students satisfactorily: CFI=.940, TLI= .935, and RMSEA= .056, but had a

poorer fit to the data for non-college youth: CFI=.891, TLI= .882, and RMSEA= .064. The seven-factor model for the markers of adulthood measure seemed to be appropriate for the college student sample but not the NCY sample.

Internal consistencies. Given the establishment of the seven-factor (subscale) structure for college students, Cronbach's Alphas were calculated to estimate internal consistencies of each subscale (corresponding to each factor). The alphas were satisfactory for Role Transitions (.836), Norm Compliance (.834), Biological Transitions (.717), and Family Capacities (.929), but were relatively low for Independence (.316), Interdependence (.556), and Chronological Transitions (.471).

Main analyses

Category Comparisons. Because the seven-factor structure was not confirmed for both educational groups, the main hypotheses comparing college students and NYCs on the subscales of markers necessary for adulthood could not be tested. Instead, descriptive statistics are provided for the college group concerning the categories they endorsed most frequently. Within the college group, markers of Independence were endorsed most frequently and markers of Role Transitions least frequently (see Table 7 for frequency of endorsement for each marker). The order of subscales in which college students most frequently endorsed markers of adulthood (from most to least frequent) are as follows: Independence, Chronological Transitions, Biological Transitions, Interdependence, Family Capacities, Norm Compliance and Role Transitions.

Personally achieved markers. It is possible that markers of adulthood that participants have personally met predicted the markers they thought were necessary for people in general to reach adulthood. Since markers of Independence were most frequently endorsed by both

educational groups they were included in the analysis. Binary logistic regression was conducted on each of the six markers of Independence assessing if personally achieving the marker makes one more likely to believe that marker is necessary for reaching adulthood. The full model (reported in Table 8) for the college student and NCY samples includes the aforementioned control variables, as well as age and SES, entered in block 1. Whether one personally achieved that particular marker was entered in block 2. In the college sample, two markers that were personally achieved predicted markers indicated as necessary for reaching adulthood. In the NCY sample, four markers that were personally achieved predicted markers indicated as necessary for reaching adulthood.

Ranked markers. The 39 markers of adulthood measure gives us a sense of what criteria people believe are necessary for reaching adulthood. However, it does not allow us to know which markers they think are most important for adult status. In the current study individuals ranked their top five most important markers (out of the 39 item measure), with #1 being most important for reaching adulthood and #5 as fifth most important for reaching adulthood. A list of the most frequently endorsed markers for each ranking within each of the educational groups was recorded in Tables 9 and 10.

Study 1 Discussion

The first hypothesis predicting college students would score higher on an overall measure of emerging adulthood than non-college youths seemed to be supported at first glance, since educational group did account for some of the variance in IDEA scores. However, age and SES explained the relationship between educational group and IDEA scores. Since age was a significant predictor of IDEA scores, it provided some evidence for emerging adulthood as an age-guided theory. Since SES was also a significant predictor, we saw that those with financial

privilege may have more of an opportunity to experience emerging adulthood than financially underprivileged individuals. Taking these factors into consideration, it seems that attending college does not solely influence the extent to which one experiences the five features of emerging adulthood. This conflicts with the idea that attending college should influence the experience of emerging adulthood based on theoretical speculation previously reported.

The second hypothesis predicting NCYs would more frequently believe they had fully reached adulthood was partially supported. When given the categorical response options of "yes", "no", or "in some respects yes, in some respects no," whether one attended college did not seem to matter in their perceived adult status after control variables were considered. Although, attending college influenced how far people believed they had progressed into adulthood, the relationship was explained by age. This provides further evidence of emerging adulthood as an age-guided theory.

Unfortunately the third hypothesis (comparing college students and NCYs on markers necessary for adulthood) could not be directly tested due to the lack of evidence for measurement invariance between the educational groups. The results suggest the seven-factor model is an appropriate measure for college students but not NCYs. This study highlights the need for exploratory factor analysis regarding the markers of adulthood measure to find a factor structure that is appropriate across educational groups. This study also alerts researchers to use caution when utilizing the markers of adulthood measure in diverse samples. In order to discover whether achieved markers predict markers perceived to be necessary for adulthood each of the 39 items would need to be assessed within educational groups. For the subscale of Independence, some achieved markers predicted markers deemed necessary for adulthood. This suggests other factors contribute to markers deemed necessary for adulthood. Examples of these factors may be

social norms or parental expectations. Descriptive statistics provided evidence that markers of both Independence and Interdependence seemed to be rated as most important for reaching adulthood in both educational groups. This builds on the literature that not only are these markers most frequently endorsed by emerging adults, but that markers of Independence and Interdependence seem to have more credence in considering criteria necessary for reaching adulthood.

Study 1 had two main limitations. First, that only explicit measures were utilized to investigate how participants experienced emerging adulthood. Explicit measures relying on methods of self-report can be subject to biases such as social desirability. Second, the college student and NCY samples were not matched on age and were controlled for statistically. These limitations are addressed in Study 2.

CHAPTER 3: COMPARING COLLEGE STUDENTS AND NON-COLLEGE YOUTH ON AN IMPLICIT MEASURE OF EMERGING ADULTHOOD (STUDY 2)

Overview of Study 2

Study 2 addressed the second aim using both self-reports and the Implicit Association Test (IAT) so that explicit and implicit perceptions of adulthood can be compared between college and non-college emerging adults. Specifically, two hypotheses were tested in Study 2:

1. Non-college youths were expected to associate the "self" with adulthood faster than their college-attending peers.

2. Implicit associations of the self with adulthood were expected to be positively related to the extent to which one explicitly perceived oneself as reaching adulthood.

Implicit Association Test (IAT) as a Measure of Implicit Bias

The Implicit Association Test (IAT) is a reaction time measure aimed to assess cognitive associations held outside of one's conscious awareness. An IAT captures this process through presenting two competing categorizations that participants are asked to sort words into. For example, Greenwald, McGhee, and Schwartz (1998) utilized an IAT to assess implicit associations between race categorizations (White vs. Black) and evaluation categorizations (pleasant vs. unpleasant). The two competing categorizations were either presented in a stereotype-congruent condition (where White/pleasant and Black/unpleasant were placed on the same side of the apparatus) or a stereotype-incongruent condition (where White/unpleasant and Black/pleasant were placed on the same side). Participants (White individuals) were asked to sort names of people (stereotypically White or Black names) and evaluative words (either positive or negative) into the appropriate categories. The authors found that participants were faster at sorting target words in the stereotype-congruent condition. The authors interpreted this finding as

a measure of White bias (or White preference). However it should be noted that the IAT measures cognitive associations, which is not necessarily synonymous with attitudes.

The IAT is not only used to demonstrate implicit associations but is also used to predict a variety of behaviors. Greenwald, Poehlman, Uhlmann, and Banaji (2009) conducted a meta-analysis investigating the overall predictive validity of the IAT in 184 independent samples. Their analysis revealed a moderate effect size (r=.274). They also compared the predictive validity of the IAT to predictive validity of self-report (explicit) measures. They found self-report measure demonstrated a higher (on average) effect size of r=.361. However, when measures included socially charged constructs (such as race), the predictive validity of self-report measures decreased, whereas IAT measures were unaffected. Furthermore, the IAT showed greater predictive validity than self-report when measures involved interracial and intergroup behavior. Overall, the IAT provides an alternative to assessing processing through explicit measures and gauges implicit biased through automatic associations between mental concepts.

The first study using an IAT to investigate implicit associations related to self-concept was conducted by Greenwald and Farnham (2000). The authors developed a Me/Not Me IAT to measure the associations of positive and negative valence words with the self, intending to uncover implicit self-esteem. Through a series of three experiments they demonstrated the IAT measure of self-esteem was correlated with explicit self-report measures of self-esteem. They also showed through confirmatory factor analysis that implicit self-esteem and explicit self-esteem are separate constructs. Greenwald and Farnham (2000) also provided evidence of test-retest reliability for the self-esteem IAT. Implicit association tests most commonly use two competing categorizations (such as White vs. Black and unpleasant vs. pleasant). Karpinski and

Steinman (2006) developed a single category IAT (SC-IAT) in order to assess the implicit association between one category (good vs. bad) and self words, indicating implicit bias of toward themselves as good or themselves as bad.

Study 2 Method

Explicit measures (self-report measures) of perception of adult status may lend insight to the differences between college students and NCYs in relation to the experience of emerging adulthood. Implicit measures can be used to support the results of explicit measures or point to differing processes through associations occurring outside of awareness. The aim of Study 2 was to develop an implicit measure of assessing the degree to which individuals viewed themselves as adult, and to compare this result between educational groups (college students and NCYs) as well as to explicit measures.

Participants

Participants were 36 college students (24 female) (mean age= 21.14, SD= 2.32) and 46 non-college youths (3 female) (mean age= 21.59, SD= 2.70). As in Study 1, participants between the ages of 18- to 29-years-old were recruited. The two educational groups were matched on ethnicity and age.

Procedure

College student participants were recruited through subjective pool using the University of Hawai'i's SONA system. After providing consent, participants completed the implicit association test (IAT) measure and completed the survey described in Study 1. Participants were compensated for their time with credit toward a class participating in SONA.

Non-college youth participants were recruited through convenience sampling techniques at a local vocational school program. Participants completed the IAT on a portable computer and

also filled out the survey described in Study 1. Non-college youths were compensated for their time with a gift card of a nominal amount.

Measures

Implicit Association Test (IAT). A single category Me/Not-Me IAT was used to assess the extent to which the participants associate themselves with words of adulthood. Participants were asked to sort target words into the categories of Me or Not Me. Target words of "Me" items contained the first-person pronouns of I, Me, Mine, Myself, and Self. "Not Me" items contained other pronouns (It, Other, Their, Them, They) (Schultz et al., 2004). Target words also included words associated with adulthood derived from the most frequently endorsed markers of adult status revealed from the results of Study 1 (markers with over 70% endorsement). These target words were: financially independent, reached 18-years-old, avoid drunk driving, control emotions, consider others, avoid committing crime, decide beliefs for yourself, and accept responsibility for your actions. Correct responses were required to move on in order to encourage attention to the task.

Perceptions of adult status. The survey described in Study 1 was also administered to participants in Study 2. This includes the five items associated with perceived adult status and demographic items.

Study 2 Results

First Hypothesis

To address the first hypothesis that non-college youths would be more likely to implicitly associate the self with adult words than college students, IAT scores (D scores) were first calculated for each participant based on mean reaction time scores divided by the pooled standard error for each educational group. A positive D score indicates a Me/Adult bias, whereas

a negative D score indicates a Not Me/Adult bias (see Table 11 for interpretation of D scores). The results showed that college students (*M*=-.14, *SD*=.34) showed a Not Me/Adult bias , whereas non-college youths (*M*=.06, *SD*=.48) showed a Me/Adult bias. In addition, an independent samples t-test found higher D scores among non-college than college youth, *t*(80)=-2.07, *p*=.042.

To assess how the aforementioned control variables may partly explain the D score difference between the two educational groups, multiple regression analyses were conducted. In the first regression model, educational group was the only predictor and was significantly associated with D scores *(B*=-.196, *p*=.042*).*

The second regression analysis included two blocks. All of the control variables were entered in the first block, including gender, marital status, number of children, living situation, and employment status. Educational group was entered in the second block. When the control variables were added to the model, educational group remained a significant predictor of D scores, *B*=-.314, *p*=.008.

The third regression analysis included three blocks. All of the control variables were entered in the first block, educational group was entered in the second block, and age and SES were entered in the third block. This analysis revealed educational group remained significant in the full model (*B*=-.317, *p*=.010). Neither SES nor age was a significant predictor in this model (see Table 12).

Second Hypothesis

The second hypothesis predicted implicit associations of the self with words about adulthood would be positively related to explicit reporting of perceived adult status, considering the interaction between educational group and D scores. A multiple regression analysis was

conducted to assess this prediction with progression to adulthood (gauged by the slider scale) as the dependent variable. Educational group and D scores were entered in the first block. An interaction term between educational group and D scores was added in the second block. Results revealed the overall model was not significant. Results also showed the interaction was marginally significant (B=23.77, p=.058). See Table 13 for results. It is likely the significances of the model and the predictors was affected by the small sample sizes. To investigate the interaction further, correlation analyses were conducted for each educational group to assess the relationship between D scores and reported progression to adulthood. Results revealed the correlation between D scores and reported progression to adulthood for college students was r=.27, p=.117. The correlations between D scores and reported progression to adulthood for NCYs was r=-.19, p=.197. The within group correlations suggest the disconnect between the implicit and explicit measure of adult status is likely driven by the negative relationship in the NCY group.

Study 2 Discussion

The first hypothesis (predicting NCYs would be more likely to associate themselves with words about adulthood than college students) was supported. Interestingly, when samples from the two educational groups were matched on age, age was not a significant predictor in scores on the implicit measure of associating oneself with the category of adult. This demonstrates the point that within studies of emerging adulthood, age should be controlled for, ideally through matching.

The second hypothesis (that implicit bias of the self with words about adulthood should predict explicit reporting of perceived adult status) was not supported. It is not unusual for implicit associations measured by IATs to be discordant from explicit measures, especially when

the categories are socially sensitive (e.g., associations between stereotypes) (Fazio and Olson, 2003). It seemed that the disconnect is most likely within the NCY sample. It is possible that NCYs (who were more likely to be of lower SES in Study 1) take on traditional adult roles, such as taking care of children, and being employed full-time. NCYs may be explicitly reporting their adult status based off of Role Transition markers, but implicitly be experiencing the features of emerging adulthood. For example, NCYs might feel like they have many responsibilities but not feel like they have achieved a stable identity or may feel like there are still many options ahead of them. To further explore this speculation it would be interesting to create an IAT designed to assess the implicit associate of the self with each of the five features of emerging adulthood. It is important to develop implicit measures to assess aspects of emerging adulthood, because they get around social desirability biases that they explicit measures are prone to.

CHAPTER 4: General Discussion

The results of the studies provided important insight to the generalizability of the theory of emerging adulthood and built on the literature by utilizing a new method to assess a specific aspect of emerging adulthood. In Study 1 we saw pertinent demographic variables, such as age and SES, played a pertinent role in explaining why differences between educational groups influenced measures of emerging adulthood. It is likely that the experience of emerging adulthood is not so much about whether one attends college or not, but whether one has the right mix of demographic experiences. Although not reported in the text, the reports of the regression analyses of the individual control variables are reported in the tables. It is important to note that many of the control variables such as gender, martial status, employment status, and ethnicity were also significant predictors in the models. So, individuals who are younger, of higher SES, White, unmarried, in college, etc. may be most likely to experience the features of emerging adulthood. If emerging adulthood is appropriate for describing the experiences of an increasingly small demographic of people, it may not be suitable as a theory of human development. Emerging adulthood may be more fitting as a context-specific phenomenon.

The results of the implicit measure of associating the self with adult not replicating the findings from the explicit measure of progression to adulthood in the NCY sample has interesting implications. Perhaps NCYs experience the features of emerging adulthood for a briefer time, or perhaps at an earlier time period in the lifespan. Or perhaps they do experience emerging adulthood in the typical age range, but it takes a back seat to the concerns of their adult responsibilities.

An important consideration this set of studies brings to light is how age relates to emerging adulthood. Arnett (2000) has described emerging adulthood as most commonly applied

to 18- to 25-year-olds, but potentially lasting through the twenties. The 25-year-old end point seems arbitrary, as there have not been any studies investigating the relationship between age and the experience of emerging adulthood within the 18- to 29-year-old age range. Age was commonly a significant predictor of dependent measures associated with emerging adulthood in the current studies, with younger participants more likely to experience emerging adulthood. It is possible that emerging adulthood applies more specifically to traditional-college-student aged individuals (whom the pioneering work for emerging adulthood was conducted on).

The theory of emerging adulthood is making a large impact on the field of psychology. For example, there is a membership society called the Society for the Study of Emerging Adulthood that promotes the understanding of development during emerging adulthood. There is also a research journal dedicated to publishing investigations focusing on the 18- to 29-year-old age range (called Emerging Adulthood). Coté (2014) made the critical observation that many people (including teachers and researchers) mistakenly interpret emerging adulthood as synonymous with young adulthood, without awareness of the theoretical assumptions of the term. As emerging adulthood continues to gain popularity in the field, it is essential emerging adulthood researchers establish external validity for their studies.

Limitations

A limitation within the current studies is the management of control variables. In a quasi-experimental design confounding variables are a threat to the validity of the study. Matching was the intended method to control for age, gender, and ethnicity in the current studies. Due to the demographics of the samples of Study 1, age and gender were not matched and instead were controlled for statistically, along with role transition variables (such as marital status and living situation).

Another issue concerns the scoring of the IDEA. It is understandable that high scores on the IDEA indicate more experience of the five features of emerging adulthood. However, it is unclear what low scores indicate. It is possible that low scores on the IDEA indicate the individual has already progress to young adulthood, but could also mean the individual is in an extended adolescence.

In study 2 specifically, context could play a role. Participants in both the college and NCY groups were recruited within the state of Hawai'i. Hawai'i an ethnically diverse environment with the highest represented races being approximately 37% Asian, 27% White, and 23% mixed-race individuals (United States Census Bureau, 2015). This provides a potentially unique environment influenced by many cultural ideals and traditions. For example, due to the high cost of living and value of filial piety, it is common for multiple generations to live in the same household. This may affect the how emerging adults in this environment endorse markers of adulthood such as "no longer living in parents' household" and "establish equal relationship with parents." Another limitation specific to Study 2 is that the NCY sample was collected from an apprenticeship program in the areas of plumbing, electrician, and auto body. It is possible that although these individuals are not pursuing a traditional college education, they may be more similar to college students than non-college youths who are not in a career-training program. The NCYs in Study 2 were also overwhelmingly male, limiting the gender variability in this sample.

Future Directions

Exploring the factors associated with the experience of emerging adulthood has many future directions. First, to continue to explore attending college as a predictor of emerging adulthood, other educational experiences should be investigated. For example, rather than assessing current college students compared to NCYs, including participants who have taken

community college or military routes should be included in the samples. Also, measuring time in college as a continuous variable (e.g. number of semesters in college) would be helpful in explaining more variability contributing to the experience of emerging adulthood.

It seemed that college students and NCYs similarly endorsed the importance of markers of adulthood based off of frequency ratings. However, due to the lack of measurement invariance across these groups on the 39 markers of adulthood measure, direct comparisons on the subscales of the markers could not be compared between educational groups. Therefore, future research should conduct exploratory factor analysis regarding this measure in both educational groups. Even though confirmatory factor analysis supported the seven-factor structure in the college group, the factor structure was developed through theoretical rationale, rather than statistical analysis. It is possible another factor structure would be a better fit for the college students, which could potentially align with an appropriate factor structure for NCYs.

Regarding emerging adulthood as a new developmental period, identifying biological and cognitive markers of the proposed stage would provide compelling evidence for its validity, rather than relying on participant perceptions and demographic experiences. For example, two brain structures in particular, the frontal lobes and the cerebellum, do not fully mature until the early to mid 20s (Arnett and Maynard, 2013). It would be interesting to investigate the relationship between brain development and the features of emerging adulthood (e.g., identity explorations and self-focus). Also, in order to assess emerging adulthood as a stage of development it is imperative that longitudinal studies be conducted that span participants' progression from adolescence through emerging adulthood and into young adulthood. This is a great challenge as this implies participants will need to be followed for a span of 15 years, potentially.

Conclusion

The current studies suggest emerging adulthood may not be fully generalizable to non-college youths. Although collecting data on NCYs is challenging, the results of these studies highlight the need for more examination of this population. Researchers should strive to develop more valid and reliable measures for assessment that apply to individuals with diverse demographic backgrounds. Furthermore, additional investigation into what characteristics may actually be developing overtime during this period will help bolster the theory of emerging adulthood.

References

Amato, P. R. (2007). *Alone together: How marriage in America is changing*. Harvard University Press.

Arnett, J. J. (1994). Are college students adults? Their conceptions of the transition to adulthood. *Journal of Adult Development, 1*(4), 213-224.

Arnett, J. J. (1997). Young people's conceptions of the transition to adulthood. *Youth & Society, 29* (1), 3-23.

Arnett, J. J. (1998). Learning to stand alone: The contemporary American transition to adulthood in cultural and historical context. *Human Development, 41,* 295-315.

Arnett, J. J. (2000). Emerging adulthood: A theory of development from the late teens through the twenties. *American Psychologist, 55*(5), 469-480.

Arnett, J. J. (2001). Conceptions of the transition to adulthood: Perspectives from adolescence through midlife. *Journal of Adult Development, 8*(2), 133-143.

Arnett, J. J. (2003). Conceptions of the transition to adulthood among emerging adults in American ethnic groups. *New Directions in Child and Adolescent Development, 100,* 63-75.

Arnett, J. J. (2004). *Emerging adulthood: The winding road from the late teens through the twenties.* Oxford University Press: Oxford.

Arnett, J. J. & Maynard, A. E . (2013). *Child development: a cultural approach*, pp. 350-460.

Arnett, J. J. & Taber, S. (1994). Adolescence terminable and interminable: When does adolescence end? *Journal of Youth and Adolescence, 23*(5), 517-537.

Arnett, J. J., & Tanner, J. L. (2011). Themes and variations in emerging adulthood across social classes. *Debating emerging adulthood: Stage or process*, (pp. 31-50.)

Barry, C. M., Madsen, S. D., Nelson, L. J., Carroll, J. S., & Badger, S. (2009). Friendship and romantic relationship qualities in emerging adulthood: differential associations with identity development and achieved adulthood criteria. *Journal of Adult Development, 16*, 209-222.

Beck, J. (2016, January 5). When are you really an adult? In an age when the line between childhood and adulthood is blurrier than ever, what is it that makes people grown up? *The Atlantic*. Retrieved from http://www.theatlantic.com/health/archive/2016/01/when-are-you-really-an- adult/422487/

Benson, J. E., & Furstenberg, F. F. (2006). Entry into adulthood: are adult role transitions meaningful markers of adult identity?. *Advances in Life Course Research, 11*, 199-224.

Blinn-Pike, L., Worthy, S. L., Jonkman, J. N., & Smith, G. R. (2008). Emerging adult versus adult status among college students: Examination of explanatory variables. *Adolescence, 43*(171), 577-591.

Breen, R., & Jonsson, J. O. (2005). Inequality of opportunity in comparative perspective: Recent research on educational attainment and social mobility. *Annual Review of Sociology*, 223-243.

Brown, E. (2015, November, 24). College enrollment rates are dropping, especially among low-income students. *The Washington Post*. Retrieved from https://www.washingtonpost.com/news/education/wp/2015/11/24/college-enrollment-rates-are-dropping-especially-among-low-income-students/?utm_term=.0157d395024a

Buhrmester, M., Kwang, T., & Gosling, S. D. (2011). Amazon's Mechanical Turk a new source of inexpensive, yet high-quality, data?. *Perspectives on psychological science*, *6*(1), 3-5.

Bynner, J. (2005). Rethinking the youth phase of the life-course: The case for emerging adulthood? *Journal of Youth Studies, 8*(4), 367-384.

Crocetti, E., Tagliabue, S., Sugimura, K., Nelson, L. J., Takahashi, A., Niwa, T., Sugiura, Y., & Jinno, M. (2015). Perceptions of emerging adulthood: A study with Italian and Japanese university students and young workers. *Emerging Adulthood, 3*(4), 229- 243.

Cronbach, L. J. (1951). Coefficient alpha and the internal structure of tests.*psychometrika, 16*(3), 297-334.

Erikson, E. H. (1950). *Child and society*. (*2nd ed)*, New York: Norton.

Erikson, E. (1968). *Identity, youth and crisis*. New York: Norton.

Fazio, R. H., & Olson, M. A. (2003). Implicit measures in social cognition research: Their meaning and use. *Annual Review of Psychology, 54*, 297-327.

Francis, D. (2012, September 13). Where do you fall in the American economic class system? *U.S. News. Retrieved from* http://money.usnews.com/money/personal-finance/articles/2012/09/13/where-do-you-fall-in-the-american-economic-class-system

Greene, A. L., Wheatley, S. M., & Aldava, J. F. (1992). Stages on life's way: Adolescents' implicit theories of the life course. *Journal of Adolescent Research, 7*, 364-381.

Greenwald, A. G., & Farnham, S. D. (2000). Using the implicit association test to measure self-esteem and self-concept. *Journal of Personality and Social Psychology, 79*(6), 1022-1038.

Greenwald, A. G., McGhee, D. E., & Schwartz, J. L. (1998). Measuring individual differences in implicit cognition: The Implicit Association Test. *Journal of Personality and Social Psychology, 74*(6), 1464-1480.

Greenwald, A. G., Poehlman, T. A., Uhlmann, E. L., & Banaji, M. R. (2009). Understanding and using the Implicit Association Test: III. Meta-analysis of predictive validity. *Journal of Personality and Social Psychology, 97*(1), 17-41.

Goldscheider, F., & Goldscheider, C. (1999). *The changing transition to adulthood: Leaving and returning home*. Sage Publications.

Goodman, J. K., Cryder, C. E., & Cheema, A. (2013). Data collection in a flat world: The strengths and weaknesses of Mechanical Turk samples. *Journal of Behavioral Decision Making*, *26*(3), 213-224.

Hall, G. S. (1904). *Adolescence.* New York: Appleton.

Hendry, L. B., & Kloep, M. (2010). How universal is emerging adulthood? An empirical example. *Journal of Youth Studies 13*(2), 169-179.

Hu, L. T., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*, *6*(1), 1-55.

Hu, L. T., & Bentler, P. M. (1998). Fit indices in covariance structure modeling: Sensitivity to underparameterized model misspecification. *Psychological Methods*, *3*(4), 424.

Karpinski, A., & Steinman, R. B. (2006). The single category implicit association test as a measure of implicit social cognition. *Journal of Personality and Social Psychology*, *91*(1), 16-32.

Marcia, J. (1966). Development and validation of ego identity status. *Journal of Personality and Social Psychology*, *3*, 551-558.

Mintz, S. (2015). *The prime of life: The history of modern adulthood*. Cambridge: The Belknap Press of Harvard University Press.

Molgat, M. (2007). Do transitions and social structures matter? How 'emerging adults' define themselves as adults. *Journal of Youth Studies, 10*(5), 495-516.

Munro, G., & Adams, G. R. (1977). Ego-identity formation in college students and working youth. *Developmental Psychology*, *13*(5), 523-524.

Nelson, L. J., & Barry, C. M. (2005). Distinguishing features of emerging adulthood: the role of self-classification as an adult. *Journal of Adolescent Research, 20*(2), 242-262.

Nelson, J. L., Padilla-Walker, L. M., Carroll, J. S., Madsen, S. D., Barry, C. M., & Badger, S. (2007). "If you want me to treat you like an adult, start acting line one": Comparing the criteria that emerging adults and their parents have for adulthood. *Journal of family psychology*, *21*(4), 665-674.

Paolacci, G., Chandler, J., & Ipeirotis, P. G. (2010). Running experiments on amazon mechanical turk.

Perry, W. G. (1970). *Forms of ethical and intellectual development in the college years: A scheme.* San Francisco, CA: Jossey-Bass.

Piaget, J. (1972). Intellectual evolution from adolescence to adulthood. *Human Development, 15*, 1-12.

Reifman, A., Arnett, J. J., & Colwell, M. J. (2007). Emerging adulthood: Theory, assessment, and application. *Journal of Youth Development*, *2*(1), 1–12.

Scheer, S. D., Unger, D. G., & Brown, M. B. (1996). Adolescents becoming adults: Attributes for adulthood. *Adolescence, 31*(121), 127.

Schlegel, A., & Barry, H., III. (1991). *Adolescence: An anthropological iniquity*. New York: Free Press.

Schultz, P. W., Shriver, C., Tabanico, J. J., & Khazian, A. M. (2004). Implicit connections with nature. *Journal of Environmental Psychology, 24*(1), 31-42.

United States Census Bureau. (2015). Quick facts: Hawaii. U.S. Department of Commerce. Retrieved from: https://www.census.gov/quickfacts/table/PST045216/15

William T. Grant Foundation Commission on Work, Family, and Citizenship. (1988). The forgotten half" Non-college-bound youth in America. Washington, DC: William T. Grant Foundation.

Tables and Figures

Table 1.
Summary of Educational Status Across Studies Assessing Emerging Adulthood

Author(s)	Age distribution of the sample	Current full-time	Current part-time	College graduate	Some college	Not currently in school
Arnett (1994)	18–21	97%	3%	0%	100%	0%
Arnett (1997/8)	21–28	28%	8%	NS*	NS*	68%
Arnett (2001)	13–19	89%	NS*	0%	6%	NS*
Arnett (2001)	20–29	46%	NS*	37%	53%	NS*
Arnett (2001)	30–35	4%	NS*	55%	21%	NS*
Arnett (2003)	18–29	37%	NS*	47%	29%	NS*
Crocetti et al. (2015)	18–30	57%	NS*	NS*	NS*	NS*
Hendry and Kloep (2010)	17–20	0%	0%	0%	NS*	100%
Nelson & Barry (2005)	19–25	100%	NS*	0%	100%	0%
Molgat (2007)	25–29	NS*	NS*	67%	20%	13%

Note. NS* indicates information is not specified.

Figure 1. *Responses to "Do you think that you have reached adulthood?" in Three Age Groups from Arnett's 2001 Investigation*

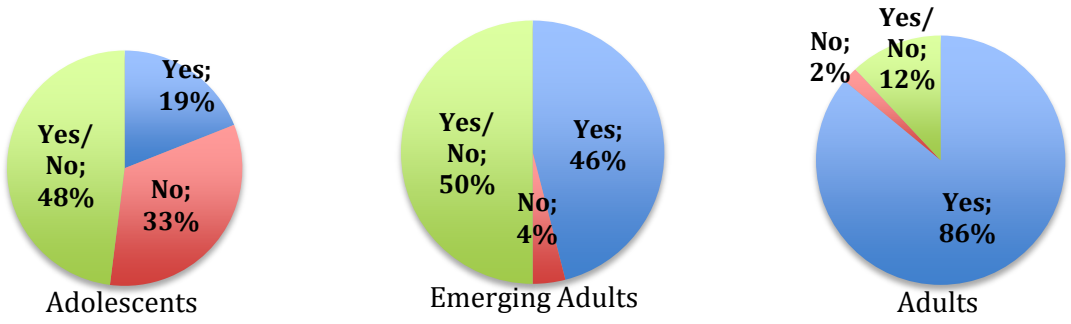

Figure 2. *Responses to "Do you think that you have reached adulthood?"*

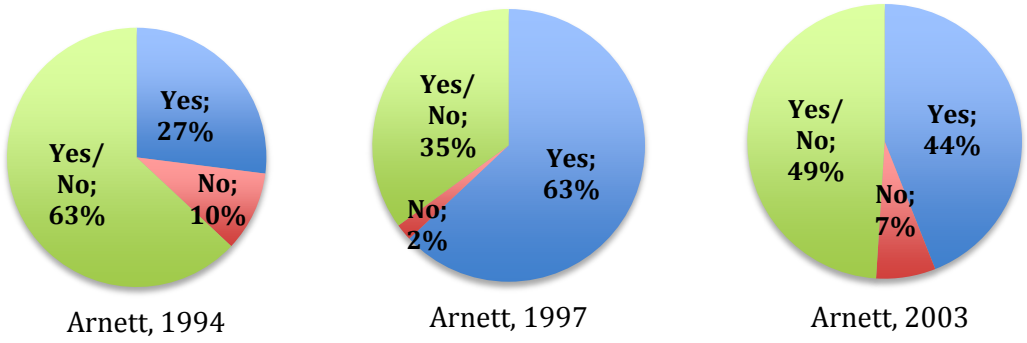

Table 2.
Background Information of Study 1 Participants

Characteristic	*College Students*	*Non-College Youths*
Age	21.08	24.05
Ethnicity		
Black	7.84	7.84
Multiracial	24.18	14.38
East Asian	9.15	5.23
White	39.87	53.60
Hispanic	5.23	5.23
Native American/ Native Hawaiian	.65	1.31
Pacific Islander	.65	0
South Asian	1.31	.65
South East Asian	8.50	2.61
Decline to answer	1.31	3.27
Parents' combined annual salary		
<23,050	15.89	24.18
23,050-32,000	11.26	24.18
32,050-60,000	31.79	21.57
60,050-150,000	32.45	23.53
>150,000	8.61	6.54
Male	31.13	50.33
Female	68.87	49.67
Married	7.24	18.42
Number of children	.17	.62
Living situation		
With parents	40.79	39.87
On campus	28.95	0
With a significant other	15.79	33.33
Independently	14.47	26.8
Working status		
Full-time	19.74	47.06
Part-time	35.53	17.65
Unemployed	44.74	35.29

Note: All numbers in the table are percentages, except for age and number of children, which are group means.

Figure 3. Results of Confirmatory Factor Analysis for the IDEA-short form

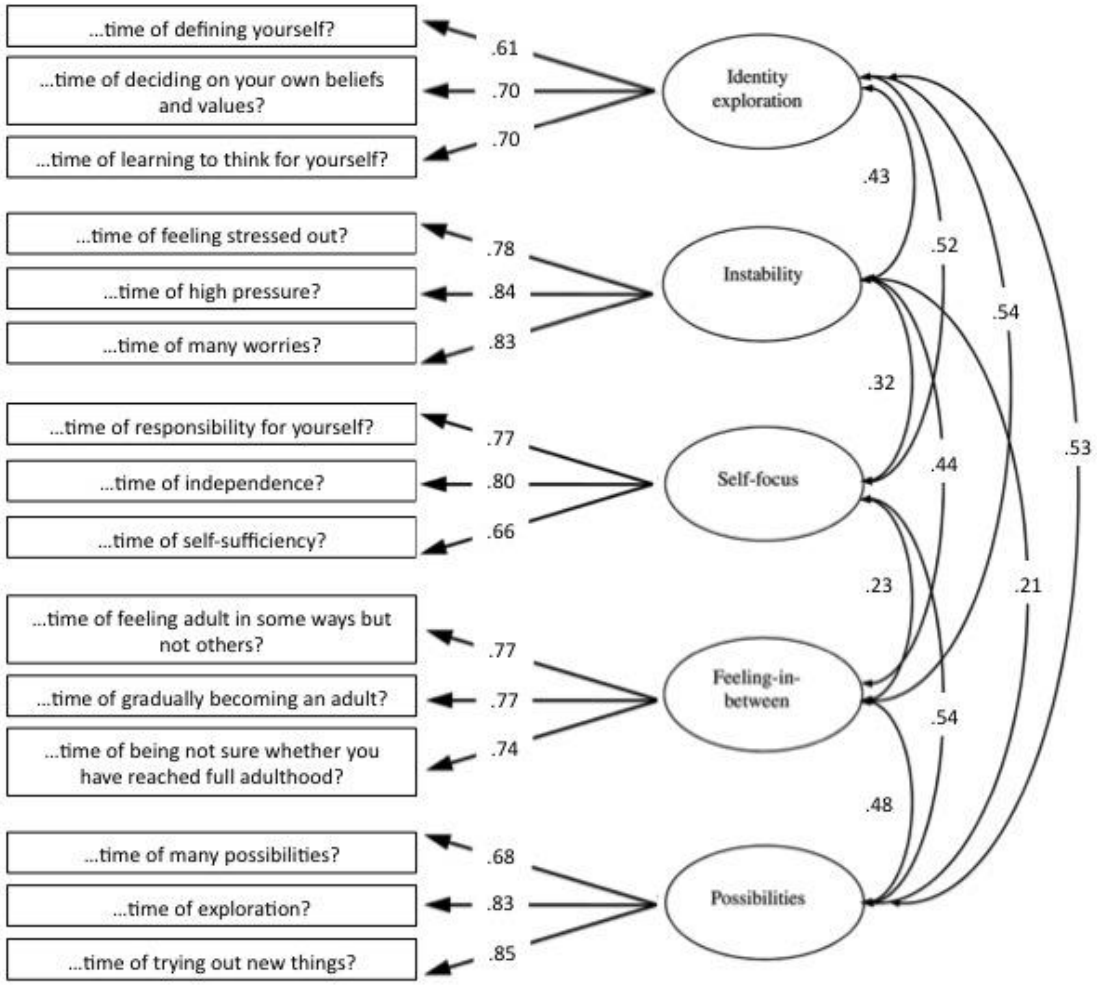

Figure 3. Standardized solution of the five-factor model of the IDEA-short form computed on the total sample. All factor loading and correlations at significant at p<.001. IDEA= Inventory of Dimensions of Emerging Adulthood.

Table 3.
Educational group predicting IDEA scores with control variables and hypothesized mediators in a multiple regression.

	IDEA Scores		
Variable	Model 1 *B*	Model 2 *B*	Model 3 *B*
Control variables			
Number of children		-.73	-.59
		(.52)	(.53)
Married		-.48	-.44
		(1.63)	(1.62)
Gender		.98	.98 (.97)
		(.97)	
Living with parents		-.23	-.73
		(1.25)	(1.27)
Living on campus		2.64*	1.61
		(1.75)	(1.82)
Living with significant other		-1.00	-.89
		(1.50)	(1.50)
Employed full-time		-.93	-1.13
		(1.23)	(1.13)
Employed part-time		-1.70	-2.01
		(1.14)	(1.14)
Ethnicity		-1.37	-1.06
		(.91)	(.93)
Educational group	3.75**	2.18*	1.66
	(.90)	(1.05)	(1.07)
Age			-.237
			(.17)
SES			.752*
			(.75)
R	.24	.33	.37
R^2	.05	.11	.136
F	13.64**	3.47**	3.55**
ΔR^2		.014	.022
ΔF		4.34*	3.44*

*p<. 05. **p< .01
Note: See p. 39 for coding scheme

Figure 4. Mediation Model for Educational Group Predicting IDEA Scores

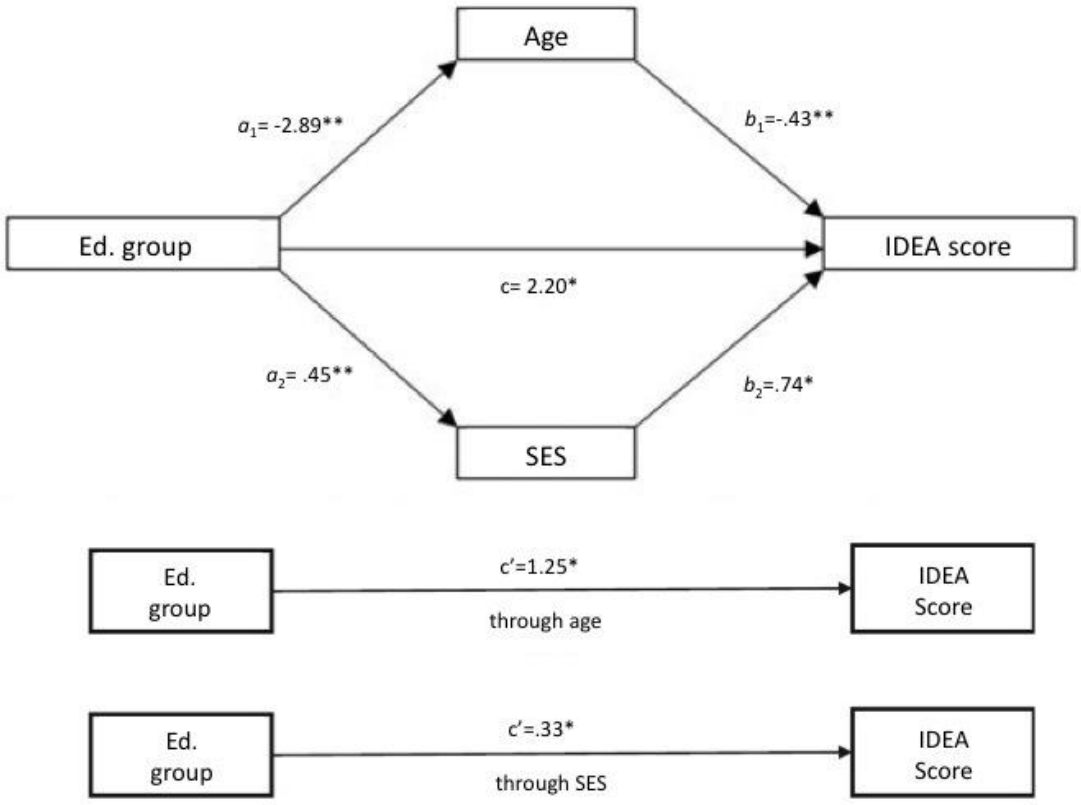

Figure 4. Unstandardized regression coefficients for the relationship between educational group and IDEA scores mediated by SES and age.
*p< .05. **p <.01.

Figure 5. Responses to “Do you believe you have fully reached adulthood?”

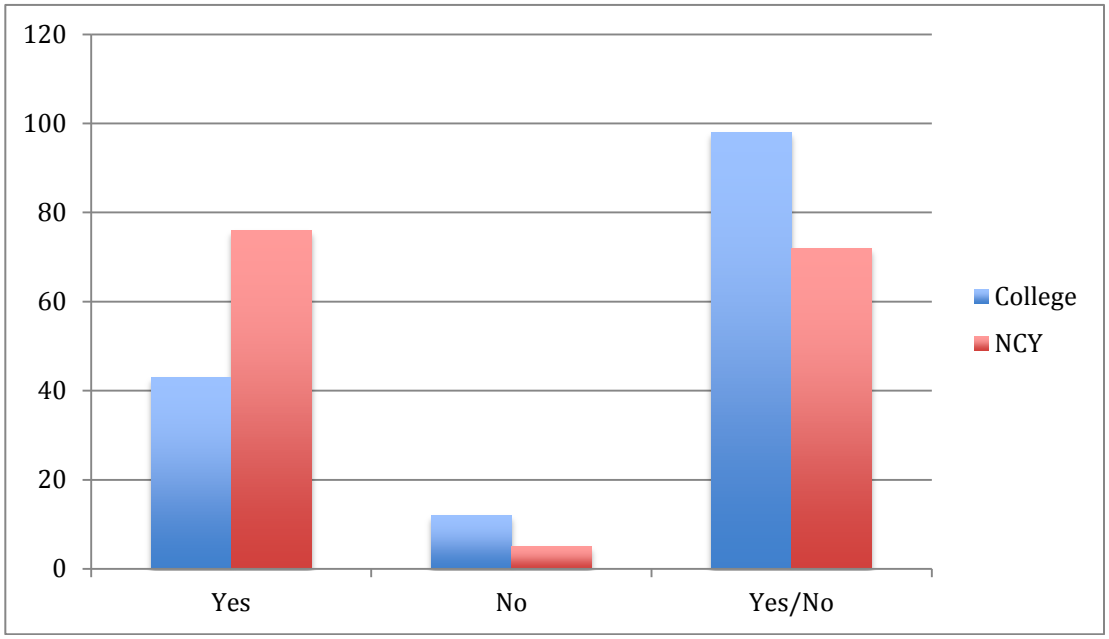

Figure 5. Frequency of participants endorsing “yes”, “no”, or “in some respects yes, in some respects no” to the question “do you believe you have fully reached adulthood?” among college students and non-college youths.

Table 4.
Frequencies of those responding "yes", "no", or "in some respects yes, in some respects no" to the question "do you believe you have reached adulthood?" between educational groups and demographic variables.

Ed. Group	**N**	**Age**	**Males**	**Females**	**SES <25,050**	**SES 23,050-32,000**	**SES 32,050-60,000**	**SES 60,050-150,000**	**SES >150,000**
College									
Yes	43	M=23.02 (SD=2.88)	24 (55.81%)	19 (44.19%)	9 (20.93%)	6 (13.95%)	18 (41.86%)	7 (16/28%)	2 (4.65%)
No	12	M=19.33 (SD=2.39)	8 (66.67%)	4 (33.33%)	3 (25%)	2 (16.67%)	3 (25%)	2 (16.67%)	2 (16.67%)
Y/N	98	M=19.89 (SD=2.55)	72 (73.47%)	26 (26.53%)	12 (12.24%)	9 (9.18%)	28 (28.57%)	40 (40.82%)	9 (9.18%)
NCY									
Yes	76	M=25.24 (SD=3.07)	38 (50%)	38 (50%)	21 (27.63%)	20 (26.32%)	15 (19.74%)	15 (19.74%)	5 (6.58%)
No	5	M=22.6 (SD=1.67)	2 (40%)	3 (60%)	1 (20%)	2 (40%)	1 (20%)	0 (0%)	1 (20%)
Y/N	72	M=22.79 (SD=3.28)	36 (50%)	36 (50%)	15 (20.83%)	15 (20.83%)	17 (23.61%)	21 (29.16%)	4 (5.56%)

Ed. Group	**N**	**Live w/ parents**	**Live w/ sig. other**	**Live on campus**	**Live independently**	**Work Full-time**	**Work Part-time**	**Not Working**
College								
Yes	43	13 (30.23%)	15 (34.83%)	8 (18.60%)	7 (16.28%)	16 (37.21%)	13 (30.23%)	14 (32.56%)
No	12	7 (58.33%)	0 (0%)	2 (16.67%)	3 (25%)	2 (16.67%)	5 (41.67%)	5 (41.67%)
Y/N	98	42 (42.86%)	9 (9.18%)	35 (35.71%)	12 (12.24%)	12 (12.24%)	36 (36.73%)	50 (51.02%)
NCY								
Yes	76	22 (28.95%0	36 (47.37%)	0 (0%)	18 (23.68%)	37 (48.68%)	13 (17.11%)	26 (34.11%)
No	5	3 (60%)	0 (0%)	0 (0%)	2 (40%)	3 (60%)	0 (0%)	2 (40%)
Y/N	72	36 (50%)	15 (20.83%)	0 (0%)	21 (29.26%)	32 (44.44%)	14 (19.44%)	26 (36.11%)

Table 5.
Educational group predicting perceptions of adult status with control variables in a binary logistic regression.

	Perception of adult status		
Variable	Model 1 *B*	Model 2 *B*	Model 3 *B*
Control variables			
Number of children		.54*	.39
		(.22)	(.21)
Married		.68	.64
		(.50)	(.52)
Gender		-.78 **	-.67*
		(.29)	(.31)
Living with parents		-.29	-.05
		(.36)	(.39)
Living on campus		-.26	.30
		(.55)	(.62)
Living with significant other		.81	.80
		(.43)	(.45)
Employed full-time		.48	.51
		(.34)	(.35)
Employed part-time		.28	.35
		(.35)	(.37)
Ethnicity		.82**	.60*
		(.27)	(.29)
Educational group	-.88**	-.32	-.03
	(.16)	(.31)	(.33)
Age			.18**
SES			-.20
R^2	.04	.21	.26
χ^2	13.10**	68.33**	86.82**

*p<. 05. **p< .01
Note: See p. 39 for coding scheme

Table 6.
Educational group predicting progression into adulthood with control variables and hypothesized mediators in a multiple regression.

	IDEA Scores		
Variable	Model 1 *B*	Model 2 *B*	Model 3 *B*
Control variables			
Number of children		1.27	.03
		(1.43)	(1.41)
Married		12.98*	11.84**
		(4.41)	(4.28)
Gender		-7.28*	-6.36*
		(2.58)	(2.53)
Living with parents		-8.26*	-5.53
		(3.37)	(3.32)
Living on campus		-.18	5.10
		(4.64)	(4.72)
Living with significant other		1.58	1.11
		(4.07)	(3.95)
Employed full-time		9.44*	8.19**
		(3.01)	(2.96)
Employed part-time		1.62	2.13
		(3.07)	(2.10)
Ethnicity		5.63*	3.71
		(2.45)	(2.42)
Educational group	-5.92*	1.39	3.17
	(2.61)	(2.81)	(2.79)
Age			1.93**
			(.44)
SES			.816
			(.82)
R	.13	.45	.51
R^2	.017	.20	.26
F	5.15*	7.45**	8.24**
ΔR^2		.001	.051
ΔF		.246	9.77**

*p<. 05. **p< .01
Note: See p. 39 for coding scheme

Figure 6. Mediation Model for Educational Group Predicting Perceived Progression to Adulthood.

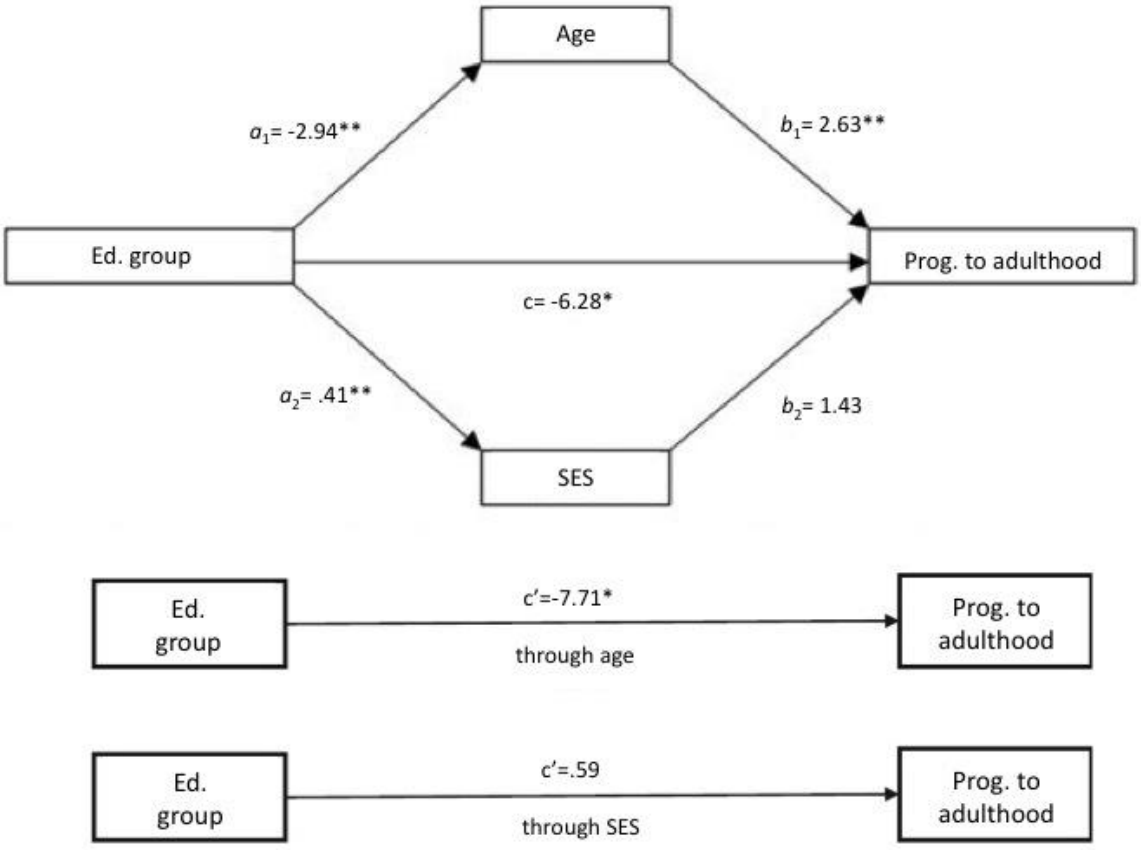

Figure 6. Unstandardized regression coefficients for the relationship between educational group and progression to adulthood mediated by SES and age.
*p< .05. **p <.01.

Figure 7. Confirmatory Factor Analysis for 39 Markers of Adulthood

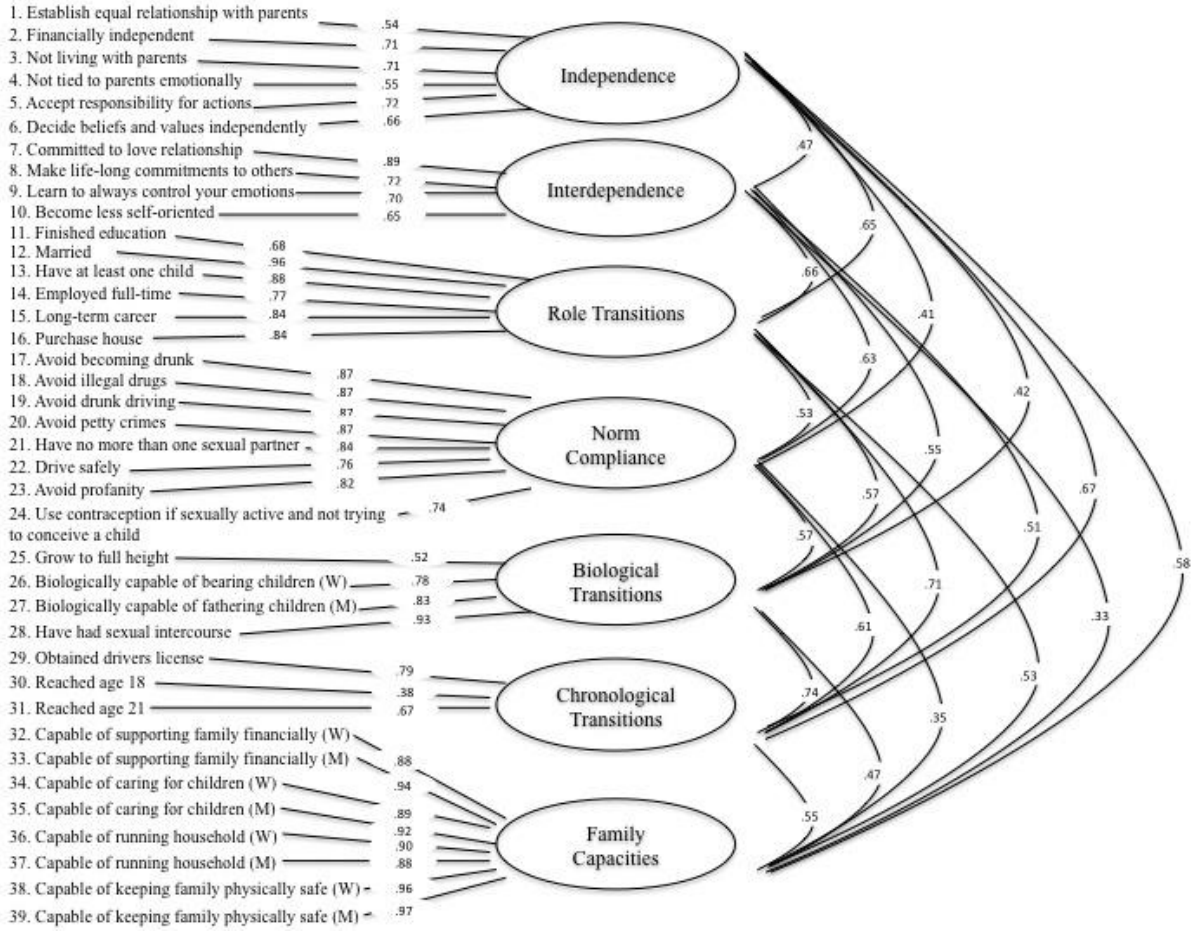

Figure 7. *Standardized solution of the seven-factor model of the markers of adulthood measure computed on the total sample. All factor loading and correlations at significant at p<.001.*

Table 7.
Percentage of Participants Agreeing That a Marker Must Be Achieved for the Transition to Adulthood and Category Mean Proportions

Marker	**College**
Independence	***68.73***
1. Establish equal relationship with parents	64.71
2. Financially independent from parents	74.51
3. No longer living in parents' household	66.67
4. Not deeply tied to parents emotionally	24.84
5. Accept responsibility for the consequences of your actions	93.46
6. Decide on personal beliefs and values independently of parents or other influences	88.24
Interdependence	***60.62***
7. Committed to long-term love relationship	31.37
8. Make life-long commitments to others	47.71
9. Learn always to have good control over your emotions	81.70
10. Become less self-oriented, develop greater consideration for others	81.70
Role Transitions	***36.27***
11. Finish education	50.33
12. Married	18.30
13. Have at least one child	17.65
14. Become employed full-time	55.56
15. Settle into a long-term career	45.75
16. Purchase house	30.07
Norm Compliance	***58.66***
17. Avoid becoming drunk	56.86
18. Avoid illegal drugs	69.28
19. Avoid drunk driving	77.78
20. Avoid committing petty crimes like vandalism and shoplifting	87.58
21. Have no more than one sexual partner	48.37
22. Drive safely and close to speed limit	67.97
23. Avoid use of profanity/vulgar language	35.95
24. Use contraception if sexually active and not trying to conceive a child	66.01
Biological Transitions	***61.76***
25. Grow to full height	62.09
26. If a woman, become biologically capable of bearing children	56.21
27. If a man, become biologically capable of fathering children	49.02
28. Have had sexual intercourse	28.76
Chronological Transitions	**67.10**
29. Have obtained driver's license and can drive an automobile	60.78
30. Reached age eighteen	77.12
31. Reached age twenty-one	63.40
Family Capacities	***60.21***
32. If a woman, become capable of supporting a family financially	54.90
33. If a man, become capable of supporting a family financially	56.21
34. If a woman, become capable of caring for children	60.13
35. If a man, become capable of caring for children	56.21
36. If a woman, become capable of running a household	65.36
37. If a man, become capable of running a household	60.13
38. If a woman, become capable of keeping a family physically safe	66.01
39. If a man, become capable of keeping a family physically safe	62.75

Table 8.
Personally Achieved Markers of Adulthood Predicting Markers Deemed Necessary for Adulthood with Control Variables in Multiple Regressions for College Students and NCYs.

	General markers necessary for adulthood			
Variable	n	College Students	n	NCYs
Establish equal relationship with parents	149	-.488	145	-2.20**
Control variables[a]				
R^2		.129		.273
χ^2		20.66		46.16**
Financially independent from parents	144	-.436	147	-.812*
Control variables[a]				
R^2		.197		.170
χ^2		31.64*		27.46*
No longer living in parents' household	146	-0.27	142	-.279
Control variables[a]				
R^2		.128		.275
χ^2		20.07		45.76**
Not deeply tied to parents emotionally	143	-.997*	146	-1.16**
Control variables[a]				
R^2		.200		.161
χ^2		31.89**		25.67*
Accept responsibility for the consequences of your actions	149	-5.15*	149	.059
Control variables[a]				
R^2		.239		.064
χ^2		40.75**		9.93
Decide personal beliefs independently	149	-1.19*	149	-1.12*
Control variables[a]				
R^2		.115		.202
χ^2		18.18		33.63**

Note: Markers in the variable column have been personally achieved by participants. The dependent variable is whether the same marker is necessary for people in general to meet before reaching adulthood. NCYs=Non-College Youths

[a.] Control variables include gender, living situation, marital status, employment status, number of children, ethnicity, age, and SES.

*p<. 05. **p< .01

Table 9.
Most Frequently Endorsed Markers Ranked Most Important to Fifth Most Important for College Students.

	Markers ranked as most important by college students	
Variable	Frequency	Percent
Most important		
Financially independent from parents	39	25.49
Accept responsibility for the consequences of your actions	34	22.22
Establish equal relationship with parents	12	7.84
Second most important		
No longer living in parents' household	23	15.03
Financially independent from parents	18	11.76
Accept responsibility for the consequences of your actions	16	10.46
Decide on personal beliefs independently	16	10.46
Third most important		
No longer living in parents' household	15	9.80
Accept responsibility for the consequences of your actions	15	9.80
Become less self-oriented	12	7.84
Learn always to have good control over your emotions	10	6.54
Fourth most important		
Decide on personal beliefs independently	17	11.11
Financially independent from parents	11	7.19
Become less self-oriented	11	7.19
Accept responsibility for the consequences of your actions	10	6.54
Fifth most important		
Accept responsibility for the consequences of your actions	14	9.15
Financially independent from parents	10	6.54
Decide on personal beliefs independently	10	6.54
Learn always to have good control over your emotions	9	5.88

Note: Percents are calculated by dividing the frequency by the total number of participants in the sample (153).

Table 10.
Most Frequently Endorsed Markers Ranked Most Important to Fifth Most Important for Non-College Youths.

Variable	Markers ranked as most important by NCYs	
	Frequency	Percent
Most important		
Financially independent from parents	26	16.99
Accept responsibility for the consequences of your actions	23	15.03
Establish equal relationship with parents	15	9.80
Second most important		
No longer living in parents' household	17	11.11
Financially independent from parents	15	9.80
Accept responsibility for the consequences of your actions	12	7.84
Third most important		
Accept responsibility for the consequences of your actions	19	12.42
Financially independent from parents	10	6.54
No longer living in parents' household	10	6.54
Decide on personal beliefs independently	10	6.54
Fourth most important		
Financially independent from parents	10	6.54
Decide on personal beliefs independently	9	5.88
Accept responsibility for the consequences of your actions	8	5.22
Fifth most important		
Establish equal relationship with parents	10	6.54
Accept responsibility for the consequences of your actions	10	6.54
If a man, become capable of keeping a family physically safe	9	5.88

Note: Percents are calculated by dividing the frequency by the total number of participants in the sample (153).

Table 11.
IAT score interpretation for D scores and raw difference scores (IAT effects)

Direction of D	Interpretation	Reaction Time (RT)
Positive ($D > 0$)	Me/Adult Bias	RT of Me/Adult trials (categories "Me" and "Adult" paired together) faster than Not Me/Adult trials (categories of "Not Me" and "Adult paired together)
Neutral ($D = 0$)	No Bias	RT of Me/Adult trials (categories "Me" and "Adult" paired together) do not differ from Not Me/Adult trials (categories of "Not Me" and "Adult paired together)
Negative ($D < 0$)	Not Me/ Adult Bias	RT of Me/Adult trials (categories "Me" and "Adult" paired together) slower than Not Me/Adult trials (categories of "Not Me" and "Adult paired together)

Table 12.
Educational Group Predicting D Scores with Control Variables in a Multiple Regression.

	IAT Scores		
Variable	Model 1 *B*	Model 2 *B*	Model 3 *B*
Control variables			
Number of children		.07	.07
		(.10)	(.10)
Married		.22	.22
		(.30)	(.30)
Gender		-.001	<.001
		(.091)	(.09)
Living with parents		.32	.33*
		(.13)*	(.14)
Living on campus		.42*	.43*
		(.19)	(.19)
Living with significant other		.60	.59**
		(.18)**	(.18)
Employed full-time		-.26	-.27
		(.18)	(.19)
Employed part-time		-.05	-.05
		(.10)	(.11)
Ethnicity		-.44	-.44
		(.22)*	(.22)*
Educational group	-.196*	-.32**	-.32**
	(.10)	(.11)	(.12)
Age			.002
			(.02)
SES			.007
R	.23	.52	.52
R^2	.051	.27	.28
F	4.29*	2.20*	2.02*
ΔR^2		.086**	<.001
ΔF		7.44	.02

*p<. 05. **p< .01

Table 13.
D Scores Predicting Progression To Adulthood with Educational Group by D score interaction in a Multiple Regression.

	Progression To Adulthood
Variable	Model 1 *B*
D scores	-9.44
	(6.55)
Ed. group	-3.57
	(4.93)
D score*Ed. group	23.77
	(12.35)
R	.25
R^2	.061
F	1.70

*p<. 05. **p< .01